THE CULTIVATOR.

TO IMPROVE THE SOIL AND THE MIND.

NEW SERIES. ALBANY, MARCH, 1851. VOL. VIII.—No. 3.

Practical Husbandry.

Culture and Preparation of Hemp.

EDS. CULTIVATOR—The many purposes in life to which the products of the hemp plant may be made subservient, constitute it one of the most useful of cultivated vegetables, not to say an article of prime necessity. Hemp, however, is a plant the cultivation of which is not considered difficult, in any moderately fertile soil, provided the grower govern his practice by a few plain maxims.

The best condition of the ground for the reception of the seeds of a hemp crop, is that pulverization of the soil and that smoothing of the surface by plowing, cross-plowing, and harrowing, which the grass or wheat farmer would esteem most suitable for either of those crops. The quantity of seed applied, varies in practice from one and a-half to two or more bushels per acre,—an excess over the right quantity being considered safer than a short-coming, in as much as when too thick, the stouter plants will take the lead and overtop the others, which are thus smothered and killed. The time of sowing varies in Kentucky, ranging from the middle of April to the last of May. Each individual must be governed in practice somewhat by his discretion, forming his judgment upon the condition of soil, advance of the season, or the extent of his crop, which if large enough to require more than two weeks in the harvesting, would make it proper to have alternate sowings, lest a part of the crop be injured by becoming over ripe,—the male plants dying and spotting.

The hemp plant disregards any moderate frost, and is therefore seldom injured from that cause in early sowing —the only striking difference between early and late sown crops, is that the chilly temperature of spring produces a low plant, with thick rough bark, whilst in the rapidly growing temperature of summer, the late crop shoots up to a greater height with a thinner and softer bark. In good crops the yield in either case will be about the same, the time of ripening varying not more than one week even though the difference in sowing may have equalled six weeks.

One maxim which experience rigidly requires the hemp-grower to observe, is, *never to commit his seed to land not in "good heart,"* a phrase which implies not only moderate fertility; but also a presence in the soil and an incorporation with it, at the time of sowing, of a fair proportion of vegetable matter, in order to ensure a proper degree of friability—a condition without which no tap-rooted plant can thrive. A neglect of this maxim, is the most pregnant source of disappointment known in the history of hemp-culture, and is generally followed by one or the other of two diseases, or rather casualties to the young crop, that is to say by "baking," or "firing," either of which maladies generally has power to arrest entirely the growth of the plant, or to hold it in check until surface grasses and weeds overpower the crop. It may therefore be well to consider in detail the nature and symptoms of both "baking" and "firing." The first results from a want of vegetable matter in the soil cultivated, as will readily be seen by attending to the symptoms. The vegetable mould or humus of a soil, is but carbonaceous matter accumulated by slow combustion for centuries, which, although but slightly soluble in water at any one time, is continually wasting away under the action of the laws of decomposition, being reconverted into its original gases, to fly off in air, or to be reabsorbed by plants. Any soil may, therefore, by washing rains, bad tillage, and hard cropping, be deprived of most of its vegetable mould; and such a soil may, after having been pulverised to the depth of six to ten inches, receive on its bosom the seeds of a hemp crop. Such a soil, so prepared, may moreover, yield a fair crop, provided the rains of the season fall in light showers, and with great frequency; but such a succession of favorable circumstances seldom happens; and a far more usual occurrence is the coming of a heavy rain, during which the mass of loose earth becomes saturated, and the moment after water begins to accumulate on the hard clay below, rising up towards the surface. If, then, the pulverised soil is defective in insoluble vegetable matter, well incorporated with the whole mass, to act as a sort of framework in keeping asunder the particles of clay, the whole soon runs together in a state of solidity, whilst the water, rising above it, carries in solution carbonates and other salts, and lighter particles, which as the water subsides, leaves a marl-like coating upon the embedded clay, rendering it impervious to water or air in a very high degree. This is called "baking," and those who have sometimes experienced its effects, in their anxiety to avoid it, not unfrequently pass into the opposite extreme, which is "firing" the plants, by attempting to grow the hemp crop with too much vegetable matter present in the soil, or with vegetable matter not in a condition to nourish and sustain vegetable life. The symptoms, above ground, indicating the presence of this malady, are a suspension of

growth, a loss of color and vigor in the plants, and a parching up of the margin of the lower leaves; below ground the plants will be found to have only a tap-root the lower part of which is sometimes decayed, whilst in other cases, sections of the root will be found perfectly rotten, with sound portions above and below such section, whilst at the same time the vegetable matter under the surface, will generally be covered with a white mould. To avoid a catastrophe so pregnant with mischief, the farmer should know the nature of the disease in order to be qualified to judge of the fitness of any means of escape. I incline to adopt the theory of Liebig on this subject, which is at least very plausible, if not true. He thinks that in such a case, the covered vegetable matter is undergoing putrefaction, a state of decay in which it not only is unfit to feed vegetables, but has power to rob all bodies in contiguity, of oxygen, in order to carry on this decay, thus even destroying or "firing" the roots of living plants.

What renders his theory more plausible is, that a habit of early fall plowing, which allows such matter full time to decay into a brittle mass, will generally overcome this danger. By a parity of reasoning—if this fall plowing shall have been neglected—the better practice in such a soil would be to cross-plow, occasionally, in the course of the hemp-sowing period, not committing the seed until the latest allowable moment.

The seed being good, the ground well prepared, and the crop having passed the dangers of baking and firing, —that is, having attained a height of six to ten inches, scarcely anything but a hail storm can disappoint the grower's hopes of a crop, the harwesting of which will be his next concern. This operation consists in cutting, curing, binding and stacking the crop,—all, if possible, without rain; for it will be found that the lint, by every process of preparation, is better when the plants are not allowed to grow dark by exposure to rain, dews and hot sun; whilst for complete success, in the white or in the water rot, a fair staple is indispensable. Cutting is generally performed by hand, using a straight knife, of fine steel, some fifteen inches long, which in operating should dip with the horizon at about the same angle as a mower's scythe. The handle attached, is about two feet long, making with the edge of the knife an angle of about 100 degrees.

In about four days after the cutting, the plants, in fair weather, are gathered and tied into bundles, and if possible on the same day put into stacks containing the yield of two acres each, of a fair crop. Keep all the branches—cutting, binding, and stacking—as near together as curing or drying the plants will allow. This practice guards against the loss of labor and injury to the crop, sometimes experienced when the plants are bound into bundles, and left standing over the field in small shocks. Hemp thus left in shocks, sometimes gets so wet as to require being spread again upon the field, before stacking. It is the work of one active man to cut, bind and stack one acre in five days.

MODES OF PREPARATION.—Hemp is rotted for the brake in three several methods, called dew-rotting, water-rotting, and snow or white-rotting. The first method is that by which far the greater portion of American hemp is made ready for market. The crop being harvested in August and September, remains in stack until the hot sun of October gives way to a milder, spring-like temperature. It is then spread, generally upon the field on which it grew, until the fluids in the circulation and the cambiose matter which binds the fibres together decompose, when the fibres contract and burst off the stalk. Then the plants are gathered and set up in small shocks over the field, where it will remain two or three months without injury, during which period, say from January to April, the breaking is performed by active laborers. One great reason why this mode of preparing hemp is so popular with the American cultivator, is, that it affords comfortable and profitable employment for winter. Seventy-five to one hundred pounds is deemed a moderate day's work. Using the hemp-brake brings all the muscles into active exercise, and a man will prepare 100 pounds of hemp without inconvenience from cold, at a temperature too disagreeable to be abroad at other farm-work.

The second method, or water-rotting, is a much more tedious and expensive mode of preparation; but after having had several years' experience, and after having been most intimately acquainted with the details of two establishments beside my own, I do not hesitate to say that it is entirely practicable to water-rot in this country with success, and will say, further, that if precautionary means be adopted in the plan of operations, there is but little risk of health. My own pool, which answered remarkably well, is one hundred and ten by thirty feet surface, and four feet deep, excavated near a small stream. The lower wall is water-tight—the balance a rough stone-wall, capped with timber, anchored down by the weight of the wall—a middle timber anchored to the bottom, as high as the plates on the wall, divided the pool into two sections, fifteen feet wide, so that cross-timbers, 16 feet long, prevented the hemp from rising above the caps or plates when the pool was filled and the water let in.

Such a pool will contain the produce of about four acres. Water was conducted into this pool over the top of the wall, and let off by pipes at the bottom. The pool being accessible on all sides by an easy grade, three teams with light sleds would empty it in half a day, the water being previously let off, and the bundles allowed several hours to drain before being handled. Two men grasping the same bundle, raise it, and by a swing of the arm horizontally, throw it endwise upon the sled upon which the bundles are removed, and in frosty weather placed, still bound, against ranges of poles to dry; or, the weather being warm, are spread upon grass lands for the same purpose. Operating in this way for three or four successive seasons, and requiring the operators to change their damp clothes immediately after emptying the pool, no case of sickness ever occurred in a family of between forty and fifty persons, that was supposed to owe its origin to any of the details of the process of water-rotting hemp.

When the medullary exudations, uniting the fibers of the hemp-plant, have been extracted by immersion, the bark is detached from the woody part of the plant, and contracts so as to burst and show the wood, sometimes throughout the whole length of the stalk. In this stage, being removed from the pool and dried, it is ready for the brake.

Among the many machines for seperating the wood from the lint, I think the best yet seen in Kentucky consists of a crusher composed of several consecutive pairs of fluted rollers, driven by steam or animal power, using the hand brake, and using in addition no scutching apparatus other than a small iron knife, and even with these aids a good operator will be unable to prepare more than 50 to 60 pounds per day.

The only way, it appears to me, in which the process of water-rotting hemp can be made to work itself into favor, and become a regular employment with the hemp grower, will be for the consumer to tempt him into the practice by paying for a time in this market the prices which rule in the Atlantic cities. Receiving thus a bonus of some forty dollars, and a certain market, many would be induced to enter upon the business, and practice would, no doubt, by familiarising the producer with the details of preparation, and by suggesting improvements, so far cheapen the cost of production as to overcome, in a great degree, the reluctance the hemp farmer now manifests for this mode of preparation.

There are two classes of persons who should abstain from water-rotting hemp—those sanguine ones who think to increase greatly their income by operating in this high-priced article—and those who cultivate to any extent, winter grains and other mixed crops, requiring much labor in spring. The first class of persons, if experienced in the dew-rotting process, will find in this case, as in most others, that it is labor which imparts value to the products of agriculture, and that they gain nothing by doubling the price of a staple when they cannot produce half the quantity. The mixed farmer, too, will find fall and spring the only favorable periods for immersing his plants—times when the sowing and planting of his crops so far engross his time and labor as to render very inconvenient the filling and emptying of the pools.

White-Rotting.—In practice, the details of this process vary but slightly from those of dew-rotting. Hemp intended to be prepared in this way, is permitted to stand one entire year in the stack, and is afterwards, about the first of December, spread upon grass lands.

It is quite a misnomer to call this process "snow-rotting!" Under no circumstances will the plants, if spread to rot during the winter following their growth, become ready for the brake without exhibiting on the fiber a greater or lesser number of dark blotches, contagiously communicated from the decomposing elements of the underlying wood. We must, therefore, impute the beauty of color and strength of fiber peculiar to this process, to a different agency than extreme cold or snow. It is known that nitrogen, with its strong predisposition to decay, is present in at least two compounds contained in the hemp plant—its nicotina, which, when dissolved in the pool, poisons fish—and its volatile alkali, which causes the plant to emit so strong an odor. It is also known that when these are extracted by immersing the plants in water, the cambiose matter uniting the fibres of the bark, is decomposed before the slightest decay takes place in the woody part of the plant. The woody part, being white, tough and elastic, like a willow rod, (a property in the stalk which renders the breaking a labor so arduous,) whilst in the dew-rotting process, before this detachment of the fibres is effected, some of the elemenst composing the fluids of circulation have been changed in their combination, and thus seem to have formed an acid, which has, in a greater or less degree, blotched the woody part with dark spots, every one of which will stain the lint. White-rotting avoids this blotching of the wood and bark, mainly, I think, by ridding the plant of most of its elements predisposed to decay, through the agency of heat—just as the same ends are accomplished by water when the plants are immersed. That heat has the power to expel these elements, or to render them harmless by causing new combinations, will appear from considering a fact familiar to all experienced hemp-growers, which is this: it often happens that a bundle of hemp spread down the autumn after the plants were grown, will be taken up in January, with the top portion of the plants, which occupied the center of the stack when in bulk, of a bright buff color, whilst the lower portions of the plants in the same bundle are dark colored and ready for the brake. Now, if these bright portions be cut off from the other parts of the bundle, and exposed again to the rains and frosts, in time a rot is effected, and an article closely resembling water-rotted hemp is produced. In this case there is not the remotest doubt that the character of the bright portions of such bundles has been changed by the great heat generated in the stack, by bulking the bundles while the leaves were yet too damp. So it is with hemp, I think, kept in bulk more than one pear. Time sets free a large portion of what is volatile, and the heat generated, whilst the mass is going through a sweat, and sublimes or changes much of what remains. Certain it is, that the market value of this article is greatly above that of dew-rotted hemp, and it remains to be determined whether a management could not be devised increasing still more this value.

This process is attended in practice with but one serious objection, which is, that the additional time required to detach the fibres from the wood, in consequence of the indestructibility resulting from its changed character, often brings round the spring of the year before it is ready for the brake; in which event it becomes necessary to stack over and brake the following winter—for not only would breaking at that season interfere with the growing crop, but it is, itself, without a dry house, almost a work of impossibility. When the mean temperature of the day rises above the mean annual temperature of the earth, the dew falls freely, so that every day is like a rainy day in winter—unfit for breaking hemp.

L. Young. *Louisville, Ky., Jan.* 1851.

Pasture Land.—Every milch cow robs the land annually of as much phosphate of lime, (bone forming material,) as is contained in eighty pounds of bone dust. From this cause the Cheshire pastures became greatly deteriorated, but were restored to their former fertility by being well boned. Land continually depastured must be fed regularly with phosphates—by the application of bones, night soil, &c. Some descriptions of lime contain phosphates in sufficient quantity, but not all.

The Upas Tree.—We learn that a tree of this species has been brought from Java by Lieut. Marchand, of the Sloop of War St. Mary's, and has been presented to the National Institute, and is placed in the conservatory of that Institution at Washington. This is the tree, which, under the name of the "Bohon Upas," was formerly represented to possess such poisonous qualities that animals could not approach it, nor birds.

Memoir of Colonel Pickering.

EDITORS CULTIVATOR—Prompted by your suggestion, I have endeavored to prepare a sketch of the life and character of the late TIMOTHY PICKERING, for your Journal. From 1818 to 1828, it was my privilege to be often in his company, and to be favored with his instruction. My aim has been to give a general view of the prominent incidents of his life; and more particularly those which show the distinguishing traits of his character. As *a farmer*, especially, have I endeavored to present him,—because in this capacity I knew him best; and because, in this, he most delighted. Such anecdotes, as I learned from him personally, I have interspersed, because these are the illustrations of character most likely to be remembered.

If this attempt to delineate character, (an exercise altogether new to me,) shall meet your expectations, I shall be gratified. I have found it more difficult to say *little*, than to say *much*. And although some may think my admiration extravagant; I have endeavored, as far as in my power, to use the same words he would have used, under like circumstances; considering his model, both in life and writing, enough to satisfy any man's ambition. I am happy to learn, that his only surviving son, OCTAVIUS PICKERING, Esq., is now occupied in preparing a biography of his father—a work that cannot fail to interest every friend of virtue, and admirer of patriotism.

Very respectfully yours,

JOHN W. PROCTOR.

Danvers, Mass., Jan. 1, 1851.

TIMOTHY PICKERING was born at Salem, Mass., July 17th, (6th old style,) 1745. He died at Salem, January 29th, 1829, in his 84th year. His father, Timothy, descended through three generations of Johns, the first of whom came from England to Salem about 1630, and settled on an estate adjoining Broad-street, which has ever since remained in the Pickering family. He was a substantial yeoman, magistrate of the county, and deacon in the church. From him the subject of this memoir inherited those traits of decision, industry, and integrity, which were ever his distinguishing characteristics.

Cradled at a time when events most momentous were starting into being,—associated with those whose fortune it was to guide the destinies of his country,—his character was necessarily strongly marked by the incidents of the age in which he lived. There is a reciprocal influence between men and things; when great events happen, great characters are developed; but whether the events produce the characters, or the characters the events, can only be determined by a careful analysis of all the accompanying circumstances. This was peculiarly the case with those who figured conspicuously in the American Revolution, among whom TIMOTHY PICKERING will ever be entitled to a position in the front rank.

The first rudiments of education were acquired by him at the free school of Salem. At the early age of fourteen, he entered Harvard College, at Cambridge, and graduated in 1763, with marks of distinction. At this moment, the first glimmerings of the flame of Liberty began to kindle. He entered upon the study of the law, but never upon the practice, as a professional pursuit. He was early appointed a judge of maritime cases for the counties of Suffolk and Essex, in Massachusetts. In 1774, he was chosen by the people of Essex, as register of deeds, an office that had been holden by his uncle John, for many years. Bred, as he was, when resistance to oppression first assumed a distinct character; summoned as he was, to command, in opposition to the first armed movement of the enemies of his country, all the energies of his naturally ardent temperament were thus called into action. Coming forward just when the rumblings of the volcano were beginning to be heard, and the earth was trembling beneath, his discriminating sagacity directed his attention to the necessity of military science,—while his physical energies were admirably adapted to the illustration of its benefits. He soon became an adept in all of the art that was then known,—and a volunteer in instructing others.

When, in 1774, the act was passed by the British parliament, commonly called the *Boston port-bill*, that shut out the capital of Massachusetts from all trade upon the ocean, threatening the ruin of its business—and at the same time the seat of government was removed from Boston to Salem—the citizens of Salem, in town meeting assembled, regardless of their own interests, through Col. P., their *file-leader*, selected for this purpose, uttered these remarkable words, equally creditable to the head and heart of their author. "By shutting up the port of Boston, some imagine that the course of trade might be turned hither, and to our benefit. But nature, in the formation of our harbor, forbids our becoming rivals in commerce with that convenient mart,—and were it otherwise, we must be dead to every idea of justice, lost to all feelings of humanity, could we indulge one thought to seize on wealth, and raise our fortunes on the ruins of our suffering neighbors."

Having been invited by Gov. Gage, while the seat of government was at Salem, to a conference relative to the duties the colonies owed the crown, the Governor concluded, "Well, there are merchants who, notwithstanding all your agreements, will import British goods." To which Col. PICKERING replied—"They may import them, but the people will use their liberty to buy them, or to let them alone."

Immediately preceding the first hostile movements of the enemy, he was chosen to the command of the troops at Salem and the adjoining towns, and was ever afterwards familiarly known by the title of *Colonel*.

On the 19th of April 1775, in the morning, shortly after entering his *register office*, he was informed by an officer from Danvers, that the British were moving towards Concord. He gave permission to the captain to go ahead, and forthwith assembled his regiment, and led them to the scene of action, in season to meet the British on their return. *Seven* of his Danvers friends then offered their lives on the altar of their country as *a first sacrifice*. This sound judgment saved many others from a like sacrifice. We speak with confidence, in relation to these events, because we have heard them in minute detail from his own mouth; and from others who were actually engaged in the battle of Lexington. Soon after this he was called to the command of a regiment of volunteers from the county of Essex, he himself being the *first* to step forward; and joined the army under Washington in New Jersey. The discriminating eye of Washington, selected him for the office of Adjutant General, and of consequence as one of his own staff. Here, his accurate business habits and well cultivated intellect, made his services of great value. Washington always spoke of him in strong terms of confidence and approbation.*

* The following extract is from a letter that was addressed to the President of Congress by Gen. Washington:

"MORRISTOWN, May 24, 1777.

SIR—I beg leave to inform Congress, that, immediately after the

Upon the resignation of Gen. Greene, of his office of Quarter-master General, Col. PICKERING was prevailed on to take his place. Those who are familiar with the events of the Revolution, will duly appreciate the difficulties of this position. What so good an officer as Greene, (and our annals afford no better name,) despaired of accomplishing, Col. PICKERING undertook and carried successfully through,—and this not without much arduous service and personal hazard.*

At the close of the war, Col. PICKERING changed his residence, from Salem to Philadelphia. Here his services were soon required, by the state of his adoption, in encountering threatening insurrection, and in the adjustment of conflicting claims to titles of land in the interior of Pennsylvania, in attending to which, he was exposed to many hardships, and had occasion for the exercise of much sagacity and firmness. One adventure, which we had from himself, will give some idea of the perils he had to encounter. On taking from his pocket, *a fine old English watch*, "This watch," said he, "is the only one I have carried for more than *fifty years*. I lost it, when captured by a band of ruffians in disguise, in the interior of Pennsylvania, (near where Wilkesbarre now is.) It was pulled from my pocket, as they dragged me across a hedge fence, in the woods, and there lay among the leaves and rubbish for several weeks. After my release from their imprisonment, it was found and brought to me. I have carried it ever since, in remembrance of that protecting Providence, which spared my life when in imminent peril." These words he pronounced with that reverential regard for an overruling Providence, which pervaded all his movements. A highly interesting narrative of the events that transpired, at the "beautiful vale of Wyoming," of which he might have said (*magna pars fui,*) was written by him in 1818, addressed to his son John—printed, but not published.

While resident at Philadelphia, he was called upon to attend to various important difficulties with the Indians. In fact whenever any Gordian knot was to be loosed, Col. PICKERING was the man to do it. Impartial history will do him the justice to say that his resources of mind were equal to any emergency.

receipt of their resolve of the 26th of March, recommending the office of Adjutant General to be filled by the appointment of a person of abilities and unsuspected attachment to our cause, I wrote to Col. TIMOTHY PICKERING, of Salem, offering him the post, in the first instance. This conduct, in preference of Col. P., I was induced to adopt from the high character I had of him, both as a great military genius, cultivated by an industrious attention to the study of war, and as a gentleman of liberal education, distinguished zeal, and great method and activity in business."

* Extract from Col. PICKERING's letter, relating to the battle of Germantown, dated Aug. 23, 1826:

"Be this as it may, the instant I received Washington's orders, I rode forward, and in the road, three or four hundred yards *beyond* Chew's house, met Sullivan, and delivered them to him. At this time I had never heard of Chew's house, and had no idea that an enemy was in my rear. The first notice I received of it was from the whizzing of musket balls across the road, before, behind, and above me, as I was returning, after delivering the orders to Sullivan. Instantly turning my eye to the right, I saw the blaze of the muskets, whose shots were still aimed at me, from the window of a large stone-house, standing back about a hundred yards from the road. This was Chew's house." (See N. A. Rev., vol. xxiii. p. 425.)

In 1790 Col. PICKERING was a member of the convention called to revise the constitution of Pennsylvania. Here he manifested that sound practical common sense which never failed to convince those whom he addressed. The following article, introduced at his suggestion, providing for general education, will be a source of joy to many, in all coming time: "The Legislature shall, as soon as conveniently may be, provide by law for the establishment of schools throughout the State, in such manner, that the poor may be taught gratis."

From 1791 to 1800, Col. PICKERING was engaged in the administration of the government, under Washington and Adams—successively at the head of the Post Office, the War, and the State Departments. Having held the office of Secretary of State for a period of five years, a train of circumstances arose, in connection with the then contemplated rupture with France, that made the harmonious cooperation of the President and his Secretary longer impracticable. Suffice it to say, that Washington and PICKERING were of one opinion, and that Adams had different views. PICKERING was succeeded by Marshall—who alone was worthy to be his successor. Of these truly great men, it may well be said, *par nobile fratrum*.

Having served his country with great ability and untiring assiduity, and finding, as many of the best men have before found, that the intrigues of ambition were more successful than honest services, be they never so disinterested, he determined to withdraw from the political arena, to the more congenial scenes of an agricultural life; having, as was pointedly remarked by Virginia's shrewdest son, "been honored with the confidence of Washington and the enmity of his successor."

ARISTIDES like, he had passed his years of active labor for the benefit of his fellow countrymen, with scarce a thought for himself or the wants of his numerous family. His attention was first directed to the forests of Pennsylvania, where he became a proprietor, and actually engaged in clearing for a settlement. But his Massachusetts friends would not suffer his "light to be hid under a bushel;" they knew his worth too well to suffer it to be buried in the recesses of the Allegh nies. By their generous kindness, an arrangement was made that relieved him from obligations, and enabled him to return to his native county, where another quarter of a century, if possible, of still more useful services, was in store for him. On his first return he rented a small farm in Danvers, four miles from Salem, where his intelligent operations, for the few years he lived upon it, were regarded with interest, and have ever been remembered as models for imitation. He then purchased a farm in Wenham, on which, for the most part, he resided, and the cultivation of which he superintended while he lived. Whoever may travel through this region, will notice, after passing the silvery water of the far-famed Wenham Pond, about one mile east of the church, a beautiful range of the *Scotch larch* tree, bordering the way for near half a mile. These were planted by PICKERING's own hand, and were on the margin of his estate—constituting a monument, if not so costly as marble, or durable as brass,—still simple and beautiful as his own pure character. From 1803 to 1811, he was Chief Justice of the County Court in Essex, the records of which period,

as well as the memories of the inhabitants, bear unmistakeable testimony to his practical good sense and discriminating judgment.

His ambition through life, was to be a farmer. His discriminating observation, and philosophic reflection, admirably fitted him for this employment. But his fellow citizens demanded of him something more. He was soon called to represent Massachusetts in the Senate of the United States, to which office he was twice elected. During this second part of the Revolution, commencing in 1812, he was Counsellor of State, and member of the Board of War. After this, he was twice chosen to represent his own native district in Congress; and what may seem extraordinary *in these times*, all these offices were bestowed upon him, without any solicitation on his part. True, they were not conferred *unanimously*, and while there exists *a right* and *a wrong* in the nature of things —*entire unanimity* is not to be expected. He was content to do what he believed to be right; and so far, even his opponents always conceded—although their notions of right might not harmonise with his. The history of this eventful period will bear testimony, that few men at the seat of government, were looked upon with more respect, or listened to with more attention. Such was the confidence that he commanded, if a variance was found between Col. PICKERING and the record, suspicion immediately arose that the record was wrong. Diffident of his own ability, and far from being dictatorial,—still, he never faltered when danger threatened. The more pressing the emergency, the firmer he stood. He was never afraid to do his duty, in the Senate or in the field. It has been said of him truly, that "on the farm, he was on a level with the farmer,—in the Senate, there was none his superior."

"From childhood to old age," says one who enjoyed the best possible opportunity to know him, "temperance, industry, sincerity, honor and truth, guided his conduct." If it would strengthen the testimony, we could with confidence reaffirm the assertion. He was uniformly straight-forward and direct in all his movements. Sinister influences found no favor from him. No one who knew him would dare to intrude them.*

(*To be continued.*)

Progress of Agriculture.

Improvement of Domestic Animals---No. 3.

KNOWLEDGE of the characteristics and properties of different breeds of animals, and of the means of improving and adapting them to special purposes, has been greatly increased within a century, and more strikingly so within the last fifty years. Before Bakewell commenced his career, (about 1760,) the breeding of animals on systematic rules, if not entirely unknown, was but little practiced in Europe or America. It is true, that the Arabians had, long before this, brought the horse to a high degree of perfection; but their rules of breeding, as well as the breed itself, were most scrupulously confined to their own people. Bakewell, too, it may be said, observed as much secrecy as possible; but his practice was in a great measure open to observation, and his numerous examples of improvement were the means of attracting attention from all parts of the civilized world. The result has been an astonishing advance in this department, although a knowledge of the principles on which it has been made, is still, especially in this country, too much restricted.

Most farmers are convinced that there is a great difference in the constitutional properties of animals of the same species. The idea that "the breed goes into the mouth," is nearly exploded. It has been clearly proved that some pigs, for example, are capable of making a much greater increase of weight than others of a different breed, from the same amount and quality of food; and the same has been demonstrated in regard to cattle and sheep. It is apparent, also, that the peculiar properties of different breeds of animals, adapt them to particular climates, soils, and purposes. This is an important principle, on the proper observance of which the success of the farmer, in regard to his live-stock, greatly depends; and it is now much better understood and applied than in former years. It is known, for instance, that the breed which may fatten to the greatest extent on a given amount of food, when confined in a stall or pen, or allowed the range of the richest pasture, may not have sufficient muscular strength and hardiness of constitution, to render it profitable under the effects of a severe climate, or where much exercise would be required. By knowing the properties of different breeds, the farmer is able to select such as are best adapted to his circumstances and wants. He sees that the leading property of one breed of cattle is to furnish the largest quantity of milk for the food consumed; that of another, the largest quantity of butter; a third, the largest amount of flesh and fat. He sees that no one breed combines all these properties in so high a degree as they are found in different breeds, and his selection must, therefore, be made according to what is to be the primary object, and with due regard to the adaptation of the stock to the situation and climate.

More correct ideas than have heretofore been entertained, now prevail in regard to the proper conformation of animals. It was early noticed by close observers, that there was a correspondence between the shape of animals and their style of motion. The horse, the deer, and the greyhound, were seen to run with great celerity; and on comparison it was found that those animals which most nearly resembled them in form, approached nearest to them in speed. A knowledge of anatomy and of the principles of animal locomotion, has illustrated this; the motions of the animal machine are shown to be governed by ordinary mechanical laws. Understanding these principles and laws, no man chooses the cart or dray horse to run a race, or puts the deer-like race-horse to heavy draft. The difference in action results mainly from different anatomical structure, based on the well-known mechanical laws, that speed and power are anta-

* The late Hon. John Randolph, of Roanoke, Va., said of him, when he had been speaking of his situation in the world, and describing his efforts for the benefit of others, to the neglect of himself, and his eyes filled with tears and his voice faltered, at the mention of his comparative poverty,—"I thought I would have given the riches of Dives himself, for his feelings at the moment; for his poverty was not the consequence of idleness, extravagance, or luxury—it was an honorable poverty, after a life spent in a series of laborious services, in securing the Independence, and establishing the Constitution of his country."

gonists, and that in proportion as the one is gained the other is diminished. It is true, that this law, in its application to animals, is subject to some modification from what is called nervous energy, but the principle of motion is unchanged.

In regard to sheep, it is well understood that there is a great diversity of characteristics. Some breeds produce wool approximating in fineness to the fur of the beaver, remarkable for its felting properties, and susceptible of being wrought into broadcloths of the finest descriptions. Others produce rather hair than wool, the pile being destitute of felting properties, and incapable, on this account, of forming fabrics of the same character as the former. Between these, there is every grade of quality produced by different breeds, each adapted to a specific use. The long wool of the Leicester, Cotswold, and Lincolnshire, is as useful in its way, as the short and fine staple of the Merino.

And so, too, in regard to other properties of the different breeds, there is an adaptedness to different situations and uses. Some are fitted for fertile valleys and smooth, rich fields; others, of more natural activity and hardiness, to rougher pastures and more exposed districts. There is an equal variation, also, in the properties of the different breeds for fattening, and the quality of their mutton. The Leicester, for instance, matures early, and fattens easily; but makes but a small proportion of lean to the fat. The South-down is longer in arriving at maturity; but has more muscle in proportion to the fat, and affords mutton of a finer quality. The Merino, in all its varieties, is valued chiefly for its wool; as it is not so much disposed to fatten, and does not give so good a quality of meat as some of the British breeds.

A knowledge of the peculiarities of the different breeds of animals, has led to their proper classification and adaptation to those purposes and situations to which they are best suited. This has been done in a striking manner in England, and is beginning to be most successfully adopted in our own country. Chiefly within the present century, several of the most esteemed European breeds of horses, cattle, sheep, swine, and poultry, have been brought to this country, and are now propagated here with advantage. The introduction of the Merino sheep, alone, has been an acquisition of inestimable value to the United States. Previous to 1801, these sheep were unknown here, and though they were for sometime opposed by the prejudices of our farmers, they have been extended over the whole country, and have for several years been the source of an annual revenue of many millions of dollars.

Barley and Malt.—Late experiments have settled the question as to the inferiority of malt to barley in feeding cattle. Barley in the process of malting loses about seven per cent. of highly nutritive substances, and thus is its nutritive power diminished. But in malt there is a peculiar substance found, generated in the malting process, and of high solvent power, which greatly aids the digestion of other food, even when such malt is given in small quantities. One-tenth part of the barley devoted to feeding stock may be used in the shape of malt. A small portion may be given, as a digestive, with dry food. A smaller portion still with moist food, like potatoes, may be given: the digestion will thus be improved, and the health of the animal insured; while even in man the mastication of a little malt after meals would contribute to the digestive process.—*Lecture on the properties of Food.*

The Pursuit of Knowledge under Difficulties.

Analytical Laboratory, Yale College,
New-Haven, Conn., Jan. 27, 1851.

Messrs. Editors—I place the above sentence at the head of my page, as the subject of the present letter. It is one which I have somewhere seen illustrated in a humorous manner that has often served to recall it to remembrance, and to provoke a smile, when otherwise the feeling excited might almost have been of a melancholy character. Within the past few years, or since my main object has been to promote the advancement of improved agriculture, the "pursuit of knowledge under difficulties" has frequently arrested my attention. It has been exemplified in the shape of some worthy farmer, old or young, who has turned away from his plow and team for awhile, and is toiling manfully to climb some steep scientific hill, or painfully striving to fathom an obscure valley of learning which has suddenly opened in his way. No toil in the field under the glowing heat of harvest, has ever exhausted the sturdy frame, as have these intellectual efforts and struggles; the venturesome agriculturist has left the region of facts and substantials, and has penetrated into a land where all is unknown; now half stifled by ammonia, with an occasional whiff of other highly nitrogenous bodies, he labors on toward, as he fancies, some glimpses of certainty, but just as he plants his foot firmly, is overwhelmed by a cloud of ashes in the form of inorganic manures. He plunges for relief into an open drain, but soon finds that he must submit to the compression of a pipe tile, and perhaps be employed in irrigation. His hair stands on end as he peruses even the names, of the awful substances which are described as constituting what he has heretofore looked upon as simple turneps and potatoes, and his own respiration becomes impeded as he thinks of the combustion that is going on in the lungs, and the transformations in the stomachs of his friends and neighbors, after one of those hearty meals that he has so unthinkingly shared with them before.

But these are only a tithe of the difficulties which beset the daring individual who strays away from the old track. He studies and perplexes himself over a theory or principle till he has become confident that he sees through it completely, and prepares to put it in practice; he is full of the subject, and even imparts his expected success to his incredulous acquaintances; but alas for his confidence, some other writer comes forth with his views upon the same topic, and very probably contradicts point blank all that the first one wrote, and leaving the unhappy farmer in a state of doubt and perplexity that is truly distressing. But perhaps he is a man not easily disheartened, and turns to some other taking theoretical proposition,—here he has at last found what must be correct, and now he is to reap the reward of his superior skill in opening this new way to wealth; unfortunately however, he very probably finds once more upon actual trial, that even scientific men are fallible; the crops that were to grow on a particular kind of food, most obstinately refuse to flourish at all; the chemically prepared fodder proves distasteful to the unscientific tastes of his animals, or if they do continue to eat, they utterly refuse to grow fat upon it, except

at an expense which makes their old food cheap in comparison.

The unlucky martyr to science, or to pretended science, finally gives up in despair. and henceforth settles down into a most determined opponent of carbon, nitrogen, silica and potash; they may do for those who have opportunity to know what they really are, but for him they are a kind of phantoms conjured up by book writers, to haunt the repose of honest, straight forward farmers.

Our friend after all, however, has yet perhaps a species of lingering desire towards science; he has bolted once from the old courses, and finds it hard to jog on in the beaten track as before. Suddenly he receives a new illumination—it is all clear now—the difficulty has been that he did not comprehend all of these scientific terms and explanations sufficiently well to know exactly what he was doing, and an agricultural school is therefore evidently the thing that is needed; here he is told, everything will be taught for nothing; the farmer will be a chemist, veterinary surgeon, physiologist, geologist, &c. &c., all in a few weeks, and will be able to examine and investigate for himself without any foreign aid. These enemies with hard names, will at last be brought under the farmer's power; he need only go to this workshop of science, and he will be turned out in a few weeks completely armed at all points. He will have a full commission to torture nature, and compel her answers to every question. He can return from his day's work, and in place of toasting apples and cracking nuts as of old, will cook his own soils over his own fire, and separate all of their parts just as easily as cut a turnep into slices. Farmers will meet together in the evening, not to talk as now, about the markets, but to compare the properties of their acids and alkalies, to speculate upon some new theories of vegetable physiology, and to wax warm in discussing the relative merits of phosphoric and sulphuric acids. The agricultural school is to be the grand panacea for all difficulties and complaints incident to the pursuit of agriculture; when it is established, we shall have no more poor crops, no more unthrifty animals, no more worn out land; the great problem of giving everybody everything, seems at length likely to meet with a solution. Thus our friend, whom we have followed through a portion of his trials, seems likely at last to arrive at a satisfactory end of his labors, and to have pursued knowledge through difficulties, until in his own estimation at least, he has fairly caught it.

For my own part, I am by no means certain that he has entirely succeeded,—that is in such a sense as he himself considers; my belief is that this school from which he hopes so much, will in its turn disappoint his expectations, as they have been so often disappointed before. He will find that even after he has graduated with all the honors, that crops will still go wrong, that manures will fail, and that he often meets with questions which all of his science is incompetent to answer; his very calves and pigs will propound puzzles of the most perplexing character, which neither his laboratory nor his books can solve.

But it will not answer to leave our friend in this condition. An interest in the object of his pursuit prompts us to offer, if possible, some alleviation to this final disappointment.

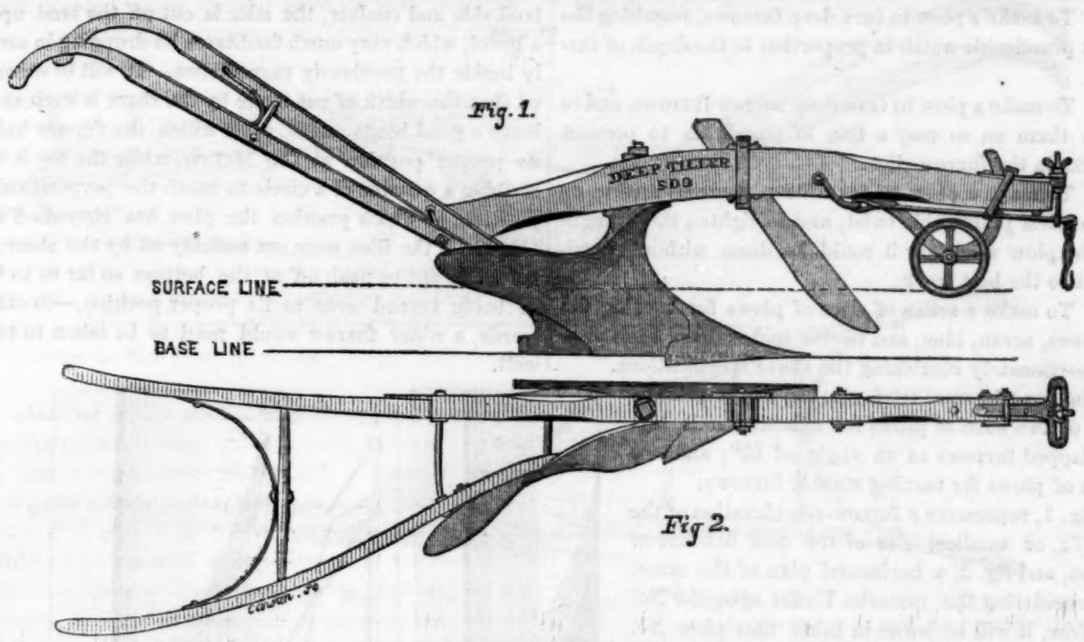
All must now see what I mean, when I speak of the farmer's "pursuit of knowledge under difficulties," and although the nature of his trials may provoke a smile, yet they are real, and in their consequences, moreover, are fraught with matter of deep import to the prosperity of our country. Since it is becoming popular to exalt science in its applications to agriculture, this department has been seized upon by many incompetent men. Between those who are really scientific authorities and those who are not, the farmer cannot distinguish; sincerely desirous to learn, he commits himself blindly to the guidance of the nearest or first guide that is available, or that offers, and frequently suffers severely in consequence.

First, a quack propounds to him a false but dazzling picture of success; then some misguided enthusiast carries him forward to still wilder plans, and if a man of sense and really good acquirements, ventures to contradict either, it is at the risk of losing his reputation and standing among those who look at him as only on a level with his ignorant opponents, and who consider all scientific, that bear the name or assume it.

The farmer is overwhelmed with new theories, each more valuable than all of its predecessors; now he is to use one kind of manure, and neglect all others; next he learns that this first is of no use, but that another is infallible; one writer says that open fields and deep plowing are cardinal points in the rules of the good husbandman, but a second assures his reader that if he can shade his land enough he need care for little more. What is to be done? Every man of sense becomes, after a time, disgusted with these contradictions, and retires in utter despair of obtaining the knowledge which he really desires. The editors of our agricultural papers are not free from blame in this state of things; many of them publish, either from ignorance, or want of independence, every mass of crude notions that is sent them, and thus help to confuse, still more effectually, the plain seeker after truth.

And now they have seized upon the last hope of the farmer, the agricultural schools, and are doing everything that can be done to dishearten and discourage their true and rational friends. I have not done justice at all to the ludicrous and absurd plans that are proposed, and the expectations held forth to our agriculturists.

These schools instead of being as they should be, places where the simple truth might be taught without fear or favor by really competent men,—places where the farmers might learn the great principles of their profession without being confused and confounded by half a score of contradictory theories, are to make thoroughly scientific men of all that even put a head or a hand within their gates, and the farmer's boy in a few weeks, is to do what men with hard study cannot accomplish in less than years. I do trust that we are not, in addition to our present obstacles in the way of safe and certain progress, to be overrun with half educated chemists, mineralogists, and pretenders to science, as graduates from such schools. Better by far not have them at all, than on such a plan as will add to the many difficulties and perplexities which the earnest inquirer after knowledge is now obliged to encounter. Yours truly, JOHN P. NORTON.



Ruggles, Nourse, Mason & Co.'s Furrow Plow, No. 72—Furrows 7 by 11 and 12 inches.

Of Plows and Plowing.

EDITORS OF THE CULTIVATOR—When I began farming, I found that my lands had never been plowed over four to five inches deep. By long use of the plow, and the oft-repeated pressure of the cattle's feet in furrows of this depth, a hard crust or *pan* had been formed, through which the roots of the grasses and other crops did not penetrate. Not being able by my own reflections to discover any good reason why the roots of my crops should be confined within so narrow limits, and finding that the standard authorities in agriculture almost invariably recommended deeper plowing, I resolved at once to give the crops a greater range of pasture. Each field, in its regular order, was accordingly broken up six inches deep. The additional soil thus brought to the surface was allowed to remain there, subject to the influences of the atmosphere, and of good cultivation. When the fields were ready for the next rotation, I found the roots of the grasses had extended just as low as I had plowed, and that, to all appearance, the soil was of uniform quality to the depth of six inches. This state of things pleased me so well that I determined to plow still deeper; and the fields were accordingly broken up seven inches deep. It is true, the appearance of the surface of the inverted furrows was rather suspicious and forbidding; but I had hopes that the agents that had operated so kindly before would act favorably again. They did so; and the crops were satisfactorily increased At the time for the next rotation, I found the grass-roots had penetrated and formed themselves into net-work just as low as I had plowed. I had now become well satisfied that deep plowing was better for me than shallow plowing; and I have accordingly been slowly but constantly deepening the soil, until portions of the fields bear a furrow nine inches deep; and as many grass-roots will now be seen at this depth as were formerly seen at the depth of six inches. The crops are good; for their roots can now strike deep, and expand, and luxuriate, and gather up nourishment, in formerly forbidden boundaries.

I think it may be said, generally, that deep plowing should be the rule, and shallow plowing the exception. It is true, that some soils may never, under any circumstances, bear as deep a furrow as others; then, again, where the surface soil is by nature very thin, and the subsoil is very poor, the process of creating a fertile soil eight inches in depth is a work of time, patience, and skill; and though it be the work of a life-time, it may yet be a very profitable work. But the soil of by far a majority of our farms may be deepened an inch or so at a time, if accompanied by liberal manurings and good cultivation. In other words, a suitable range for the roots of our crops may be obtained in a few years. In no case, however, should the surface plow be plunged into a poor subsoil at hap-hazard.

As soon as I was ready to turn sod-furrows seven inches deep, my plows began to be troubled to carry themselves erect and do as good work as at six inches deep. At eight inches deep they did not do nice work, and at nine inches deep they could not work at all, until I added some contrivances of my own.

About a year ago, I called upon Messrs. RUGGLES, NOURSE, MASON & Co., and upon stating the difficulties I had experienced with my plows, they remarked that there was quite a growing demand for plows for deep work; and they at once evinced a most commendable readiness to undertake such a series of experiments, regardless of expense, as should enable them to supply, in the best manner, this demand of an advancing agriculture. They made a plow that gave me satisfaction, for it could turn a furrow a foot deep, and it did not choke under the beam. The making and trial of this plow suggested further improvements, and these in turn led to others. The various experimental trials may be summarily stated as follows:

1. To make a plow to turn furrows ten to twelve inches deep, and to turn them without choking under the beam.

2. To make a plow to turn deep furrows, requiring the least practicable width in proportion to the depth of furrow.

3. To make a plow to turn deep narrow furrows, and to turn them on so easy a line of transit as to prevent breaks in the furrow-slice.

4. To make a plow to turn deep narrow furrows on the easiest practicable twist, and to lighten the draught of the plow whenever it could be done without detriment to the best work.

5. To make a series of sizes of plows for turning flat furrows, seven, nine, and twelve inches deep, each plow proportionately combining the above specifications.

The experimental trials also led to the production of two sizes of plows for adhesive soils, laying lapped furrows at an angle of 45°; and two sizes of plows for turning stubble furrows.

Fig. 1, represents a furrow-side elevation of the No. 72, or smallest size of the new flat-furrow plows, and fig. 2, a horizontal plan of the same. In considering the remarks I offer upon the No. 72 plow, it will be borne in mind that plow No. 73, for furrows nine inches deep, and plow No. 74, for furrows twelve inches deep, each possess the same general form and working properties of No. 72. They are each constructed upon the principles of an ingenious scale, the lines of which, as applied to the mould-boards of the three plows, are relatively the same throughout.

Fig. 1, represents the handles as long and *raking*, which gives the plowman a powerful leverage, and an easy and accurate control of the implement; the beam is high, and arches well over the coulter, to permit loose grass or other loose matters to pass off, and the plow to swim clear; the coulter is consequently long, and is made wholly of steel, to give it the requisite stiffness; the wheel, or roller is nine inches in diameter, to prevent laboring and creaking on the axis, and it is set under the beam, experiments the past summer indicating that a wheel on the side of the beam gives the plow an unsteady movement; a wrench accompanies the plow, adapted to the adjustment of the coulter, roller, clevis, &c.; the draft rod is short, connecting with the beam forward of the coulter, in order to preserve the space under the beam in that region entire; the quadrant or clevis attached at the end of the beam, through the bolt of which the draft-rod passes, is adapted to give the plow any desired *landing* or *earthing*; the mould-board is long, the line of transit over it for the furrow-slice, is easy, giving the slice a long, easy, and equal curvature throughout.

Fig. 2, shows the inclination of the land-side, and the coulter has a corresponding inclination. Fig. 2 also shows the position of the beam over the body of the plow. The share and lower parts of the mould-board are narrow, and the mould-board is high, to adapt the plow to deep, narrow work. The share is long, with a raking cut, which gives it an easy entrance into the ground.

Fig. 3, represents pretty well the movement of a furrow-slice 7 inches deep and 11 inches wide, over the mould-board of this plow, and its final position after leaving the plow. The easy transit and the equal flexure of the slice, are noticable. By means of the inclined land-side and coulter, the slice is cut off the land upon a bevel, which very much facilitates its dropping in snugly beside the previously turned slice. It will be observed that the width of cut made by the share is such as to leave a good hinge uncut, upon which the furrow holds its proper position at the bottom, while the top is describing a quarter of a circle to reach the perpendicular position, at which position the plow has ripped off the hinge. If the slice were cut entirely off by the share, it would be apt to push off at the bottom so far as to fail of being turned over to its proper position,—in other words, a wider furrow would need to be taken to turn well.

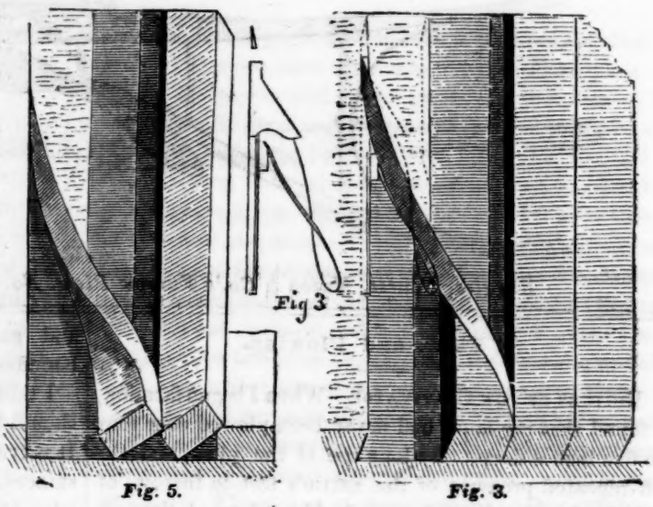


Fig. 5. Fig. 3.

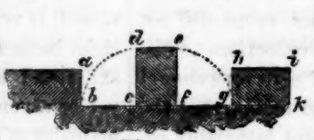


Fig. 4.

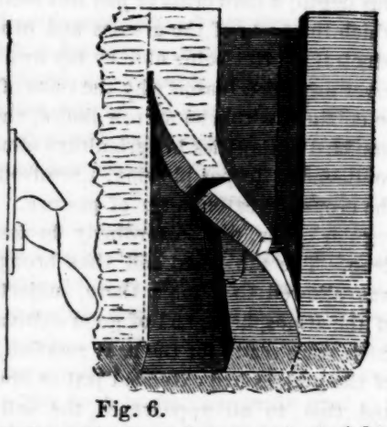


Fig. 6.

Fig 4 shows that, theoretically, a furrow cut straight from the land will shut in beside the previously turned furrow. The furrow slice, c, d, e, f, is cut straight down at a, b, and rising on the corner e, as a pivot, it describes a quarter circle, b, d, and then changing to f as a pivot, it describes another quarter circle, e, g, and shuts in snugly beside the previous furrow, g, h, i, k. But in practice it is difficult to make the furrows do so; they are very apt to ride on the corners, as represented by Fig. 5. With an inclined land-side, and a bevil-cut from the land, this practical difficulty is avoided.

Fig. 6 represents the movement of the furrow-slice over an imperfect mould-board. It will be observed that the plow is too wide on the bottom to take a narrow furrow, and if the attempt is made to turn a 11 inch furrow, there is no hinge left for it to turn on. The mould-board is so short, and wings over so excessively, that the fur-

Fig. 7.

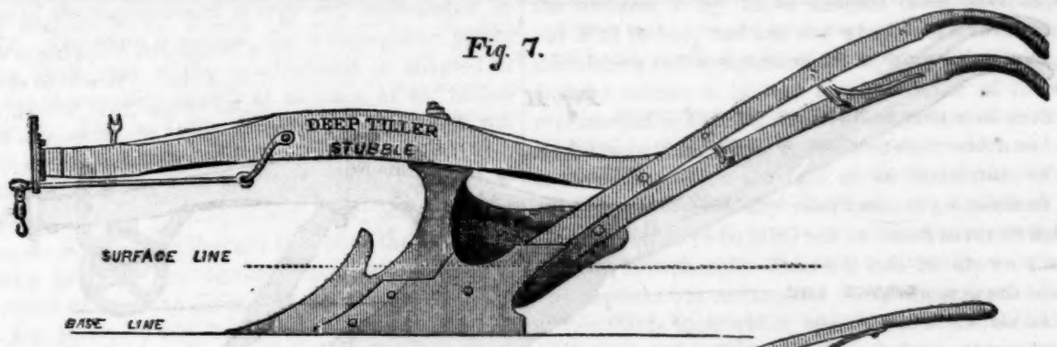
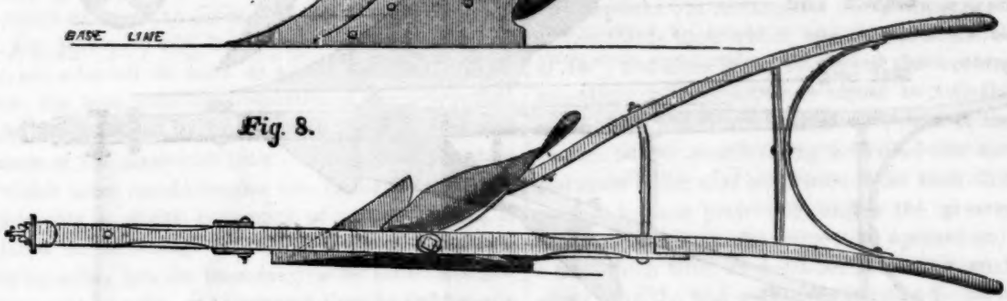


Fig. 8.



Ruggles, Nourse, Mason & Co.'s Stubble Plow, No. No. 37.

row-slice is cramped into an unnatural movement, and is badly broken. The plow is also too low every way for a seven-inch furrow, and is completely buried. We find in practice that such plows can only be kept erect in furrows seven inches deep, by constant, laborious exertion on the part of the plowman; that they have a constant tendency to ride the furrow at the point where the mould-board wings over so much; that the heel of the land-side sole is lifted an inch or two from its proper level position in the furrow-channel, and that the plow inclines very much to run on the point of the share. Many of our American plows are too wide on the bottom for narrow furrows, too low in the mould-board for deep furrows, (or furrows seven inches deep,) too short for turning any furrows perfectly, and too unsteady in their movements generally.

It is a too common custom with our farmers in plowing, to strive to get over the greatest possible breadth of land in a day, without regard to the best work. The furrows are too shallow, and they are cut as wide as the plow can possibly turn them, and often even wider, the deficiency in the plow being made up by the foot of the plowman, or else by the "cut and cover system;" and this gives the plow a very unsteady action; the furrows are very crooked and uneven; they do not match together at all well; the plowman raves and scolds and whips; he assumes all sorts of attitudes, the team is chafed and fretted, and the whole matter is wrong. It is much harder work both for man and team to plow so, than it is to take nice, straight, uniform furrows. But this is not all the evil. The implements that follow the plow cannot do their work half so effectively as they would do if the plowing had been accurate and nice,—much less can they do what should have been done by the plow. There is no work in the whole round of husbandry that more demands the exercise of patience, precision and skill, than that of plowing,—none, where, by the exercise of these qualities, the farmer receives a better reward. That old worthy, Jethro Tull, in his honest enthusiasm used to say, that if land were thoroughly pulverised, manure would not be needed. He stated the case pretty strongly; but it is not stating it too strongly to say, that however well land may be manured, the crops it is *capable* of producing will not be obtained, unless it is well pulverised—unless it is reduced to that state of tilth that permits a free circulation of air and moisture through it. Not the thick heavy clods, but rather the finely pulverised particles form the active portions of the soil. In whatever light, then, we view the matter, thorough puiverisation should be the aim of the farmer. *Deep narrow* furrows are the best foundation for fine tilth. If the plow has failed to prepare this foundation in the best manner, no implement following in the cultivation can supply the deficiency.

Fig. 10.

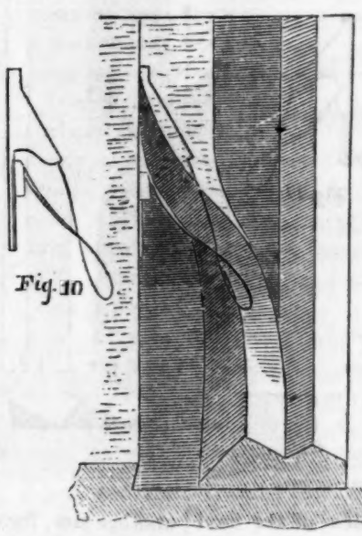


Fig. 9.

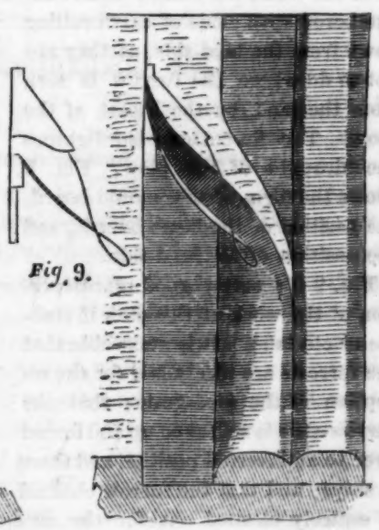


Fig. 7 represents a land-side elevation, and fig. 8 a

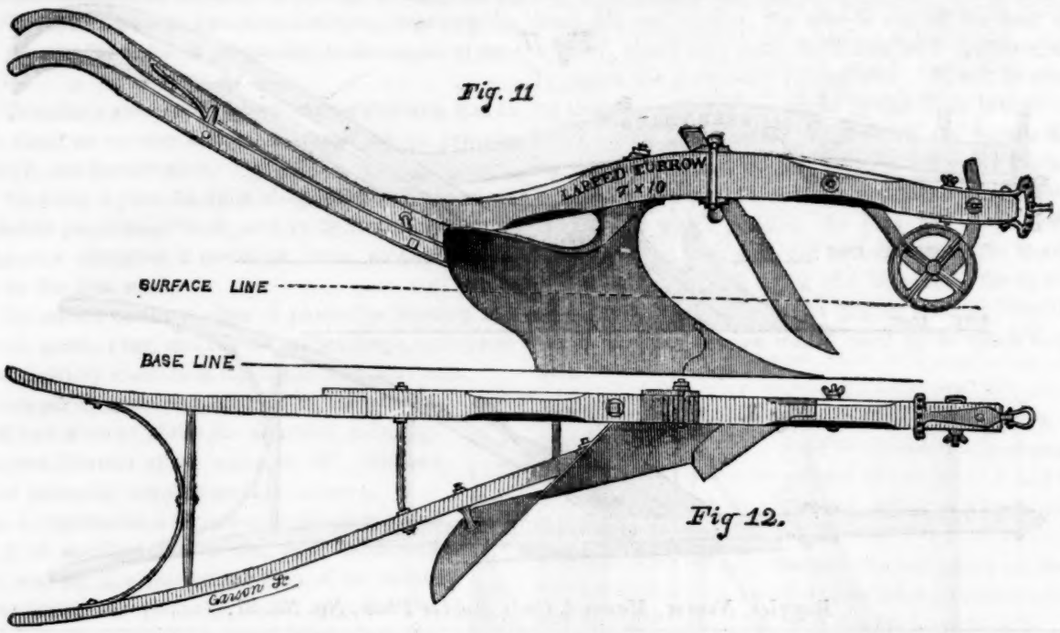


Fig. 11

Fig 12.

Ruggles, Nourse, Mason & Co.'s Plow for Lapped Furrows—Furrows 7 by 10.

plan of stubble plow, No. 37. There is a larger size, No. 38, adapted to deeper work than the plow here represented. The surface-line, Fig. 7, shows the position of this plow in a seven inch furrow. The handles are of good length, though shorter than those of the No. 72 plow; the beam is high and arching; it is mounted with a short draft-rod and a dial-clevis, adapted to give the plow a wide range, both in *landing* and *earthing*. The perpendicular height from the base-line to the under side of the beam, immediately forward of the standard, is seventeen inches, which enables the plow to make its way among rank stubble, corn-stalks, &c., without choking. The fin-cutter is an excellent point in this plow. By making an easy, clean cut from the land, the furrow is not encumbered with clods of earth rolling down from the land-side, as they are apt to do where the furrow is torn from the land by the breast of the plow. The fin-cutter also lightens the draught of the plow. Fig. 8 shows the form of the mould-board, the position of the beam over it, and the position of the land-side.

Fig. 9 is a pretty good representation of the work of this plow in stubble or old land. It is noticeable that the furrows are nicely laid for the reception of the seed-grain; that the furrow-slice is all taken up and forced over to an inverted position and there it stays; and that the furrow channel is entirely cleaned out for the reception of the next furrow. It is impossible, however, to represent these practical matters exactly, on paper; we can only represent them generally.

Fig. 10 represents the work of an approved sward plow, in stubble furrows. It is not broad and full enough at the heel to clean out the furrow-channel. Then, too, after the furrow-slice has reached the perpendicular position, there is not force enough in the mould-board to compel the slice to go over to its proper place, and as there is not cohesion enough in the slice to hold it together, a portion rolls one way, and a portion the other. The centre of the furrow on top is therefore the highest, the furrow-channel is half filled up, and the work generally will not compare with that done by the stubble plow No. 37. The stubble plow No. 37, would not make nice work in sward-furrows; it would break them too much.

Fig. 11 represents an elevation and Fig. 12 a plan of the new sward plow for moist adhesive soils. There is another size, for furrows nine inches deep, of the same general form and proportions with the one here represented. The handles, Fig. 11, are long and raking, the beam is high, giving a space of seventeen inches forward of the coulter, and the plow is mounted with a Scotch clevis, the adjustment for *earthing* being represented in Fig. 11, and that for *landing* in Fig. 12. The general

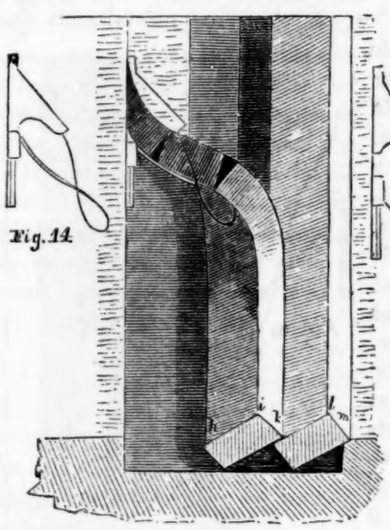


Fig. 14.

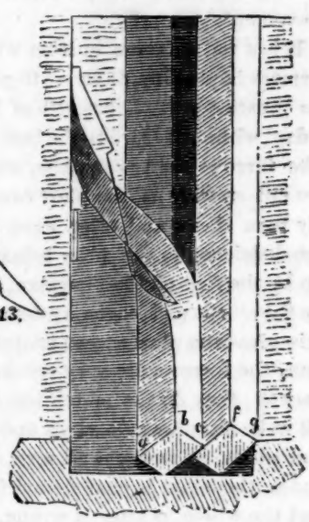


Fig. 13.

outline of the mould-board is very well represented in Fig. 12. The share is narrow, the wedge-power great, and the back part of the mould-board is adapted to place the furrow-slice exactly at an angle of 45° before leaving it. The land-side is perpendicular, and the coulter stands in a range with it.

In considering the form and proportions of a plow best adapted to the working of stiff heavy soils, Messrs. R., N., M. & Co., have thought that plow the best that will cut a perfectly rectangular furrow, whose depth is to its width as two is to three, and lay it at an angle of 45°. The plows for stiff lands that they now offer the public, are adapted to work as above specified. They combine the best working properties of the celebrated Scotch plow invented by Small, with the lightness and cheapness of the American plow. The lines of the scale from which these mould-boards are fashioned, give the mould-boards a slight convexity of surface, which is considered an advantage in the working of tenacious, unyielding soils; but the lines may be varied to straight lines for medium soils, or to concave lines for light sandy soils. The line of transit for the upper edge of the furrow-slice, is adapted to the delivery of the slice with an unbroken crest. The mould-board presents a uniform resistance to the furrow-slice, and will brighten uniformly over the entire surface, however tenacious the soil may be.

Fig. 13 represents the action of this plow in furrows seven inches deep by ten inches wide. The plow enters the ground very easily, a good hinge is preserved upon which to raise the furrow-slice to its perpendicular position, the back part of the mould-board lays the slice at an angle of 45° before leaving it, and the two exposed faces of the slice are of equal breadth,—namely, seven inches.

Fig. 14 represents the action of a plow unadapted to laying proper lapped furrows. The plow is so wide upon the bottom as to require a width of furrow-slice of at least twelve inches, and yet it cannot go more than seven inches deep,—indeed it can hardly do that, without crowding over to the left or land badly, and it cramps and breaks the slice very much. But the slices are of unequal proportions. The width is too much for the depth, and, consequently, so flat a surface is formed, that if the furrows are to lie exposed for some time to the weather, and if the soil be a stiff adhesive clay, it will run together and bake so much as to render the harrow quite inoperative, and but a shallow seed-bed will be raised. The spaces underneath the furrows are wide and low, and they will be apt to fill with soil, which will prevent a proper circulation of air, and a free passage of surperfluous moisture, and the surface will be apt to be wet and heavy.

The triangles, abc, efg, Fig. 13, are of equal sides, and the angles, b, f, are angles of 45°. The triangles hik, klm, Fig. 14, are of unequal sides, and the angles, i, k, are angles of only 36°. If we suppose a series of *sections* of these 7 by 10 and 7 by 12 furrow-slices, each extended to ten rods, for instance, in width, and that they are one inch thick, we shall find upon a calculation of the aggregate exposed surface of each, that the furrow sections, 7 by 10, of equal faces, have exposed 2791 inches of surface to the air, while the sections, 7 by 12, of unequal faces, have exposed but 2722 inches; and any one who chooses to extend the calculation and comparison to an acre of ground, will find the balance to be very much in favor of the slices represented in Fig. 13. A like comparison of rectangular furrow-slices, whose depth is to their width as two is to three, and which are laid at an inclination of 45°, with furrow-slices of any other form, or proportions, that are practicable to be laid, will be found to result in favor of those first-named;—indeed it can be shown that no furrow-slices but rectangular ones, whose depth is equal to two-thirds their width, *can be laid at an inclination of* 45°; and since it can be proved that rectangular furrow-slices, whose depth is equal to two-thirds their width, and which are laid at 45°, present the greatest surface to the ameliorating action of the atmosphere; and since it can also be proved that such furrow-slices present in their projecting angles the greatest cubical contents of soil for the harrow to operate on, in raising a fine, deep tilth, or seed-bed, and that such furrow-slices have the best spaces for the circulation of air, and the passage of water, underneath them,—we may conclude that all plows, for laying lapped-furrows in heavy adhesive soils, are absolutely faulty in just so far as they fail to cut rectangular furrows, whose depth is to their width as two is to three, and to lay them at an inclination of 45°. I would give unerring mathematical demonstration of these points, were it not that I should be extending an article already too long.

I intended, Messrs. Editors, to have said something about the importance of each radical improvement in the plow, in increasing actually the wealth of the country, not only directly by the increased crops to be derived from improved plowing, and the direct saving of expense in doing the work, (a good plow, saving time and labor,) but, indirectly, by exciting in the farmer's mind a new degree of pride and ambition to farm it better every way. But my article is already too long, and I forbear. F. Holbrook. *Brattleborough, Jan.* 29, 1851.

The Horticultural Department.

CONDUCTED BY J. J. THOMAS, MACEDON, N. Y.

Inquiries and Answers.

Mr. Editor—Will you please name a list of early bearing varieties of the apple of the different seasons? (1.) There are reports in circulation in the West that the Northern Spy is subject to the bitter rot, which, though I have utterly doubted, I should like the certainty of? (2.) Does the Red Canada compare in value, both tree and fruit, with the Esopus Spitzenburgh? (3.) In applying salt to kill the large white grub, should it be left on the surface or plowed in? (4.) What is the best Book on Soils, and the general relations of Geology to Agriculture? (5.) F. K. P. *Delevan, Wis.*

(1.) Early Red Margaret, Red Astrachan, Sops of Wine, Drap d'Or, Late Strawberry, Hawthorndean, Fall Orange, Dutchess of Oldenburgh, Dyer, Porter, Summer Sweet Paradise, Bullock's Pippin, Wine Apple, Downton Pippin, Baldwin, Williamson, Jonathan. The following usually begin to bear early, but produce rather thin crops for the first few years:—Early Harvest

Gravenstein, Rhode Island Greening, Tallman Sweeting.

(2.) Like many others of our finest apples, it is sometimes very slightly affected, but on the whole few are more free from the bitter-rot, so far as yet tried.

(3.) If compelled to choose between them, we should take the Red Canada. Its flavor is more agreeable, though scarcely so rich as the Spitzenburgh; and although a slender grower, bears better.

(4.) We have no knowledge on the repelling influence of salt on this grub. If it has a cuticle like that of the cabbage-grub, salt cannot affect it much, as some years ago in an experiment to save the cabbages, it was found after having eaten its fill, to be reposing unhurt in the bed of salt encircling the plant, with all the indifference of a philosopher.

(5.) Norton's Elements of Scientific Agriculture.

FRUIT TREES TO SUPPLY A FAMILY.—"How many trees, and in what proportion for the different kinds, would be a fair number to supply a family of ordinary size, with a good supply of fruit?" *P. W.*

This is a question which admits of a great many answers, as the domestic habits of a family, nature of the locality, soil, treatment, &c., may vary. But taking the different circumstances at a fair average, and admitting that good cultivation is to be given, one hundred trees ought to be sufficient. With carelessness or inattention, two hundred might not be enough.

A family should be supplied with fresh fruit throughout the whole yearly circle, and therefore there should be a large proportion of long-keepers, which are only to be found among the pears and apples. If the varieties are well selected, and with a proper distribution for a succession in ripening, the following numbers of each would probably effect the desired purpose as well as any:

30 apple trees,
20 pear trees,
12 peach trees,
10 cherry trees,
10 plum trees,
6 apricots,
4 nectarines,
5 quinces,
3 grape vines.

If, in addition to the above, a few square rods were occupied with strawberries, raspberries, and currants, they would afford a good supply of most grateful delicacies through the first half of summer.

MICE.—A correspondent wishes to know the best way to protect trees which have been *laid-in* in quantities for the winter, from the mice. After trying various modes, the following has proved best—set the trees in an upright or perpendicular position, either on the surface of the ground or in a slight hollow, and then bank up round the stems on all sides. The mice will never climb the sides of a steep mound of fresh earth, and the trees will be safe. Where trees are annually to be thus preserved, a bed of *peat* drawn on purpose will enable the workman, from its lightness, to cover the roots in a fourth part of the time required with common soil.

Western Horticultural Review.

No American city is advancing more rapidly towards maturity in horticultural knowledge and enterprise, than the metropolis of the Ohio Valley. An index to this progress is furnished by Dr. WARDER's excellent Horticultural Review, published at that place. Judging from the second number, the only one seen, it must stand in the first rank of periodicals of its kind. The present number is largely occupied with a well prepared and minute account of the late rich and varied exhibition of the Cincinnati Horticultural Society, and it also contains several valuable original articles from the editor and correspondents. Although particularly adapted to the region of the west, it cannot fail to prove interesting to amateurs in all parts of the country. Its mechanical execution is in keeping with its general character, exhibiting much neatness and taste.

A few pomological notes, derived from its pages, may prove interesting:

DIANA GRAPE.—It appears that the Diana Grape, classed by many eastern cultivators as the best American variety, is not regarded with great favor by Cincinnati pomologists. In common with "forty others," the editor renders his condemnation of this sort, when compared with the rich and melting Catawba, as it becomes when ripened under the hotter suns of southern Ohio, and thus far exceeding in quality the same Catawba as usually ripened in the eastern and more northern States. He therefore recommends his friends not to purchase too largely—or to purchase the Catawba, already so well proved in that region, "of which they can procure one thousand roots, instead of one, for their five dollar bill"—one year Catawbas having been actually sold so low in some instances, where it is cultivated so largely.

KENTUCKY APPLES.—Among those highly commended, are the Bohanon, a delicious, yellow, autumn apple, ripening at the close of summer in Kentucky; the Fall Queen, known also as the Horse Apple, a mid-autumn fruit; and Pryor's Red and Rawle's Janet—"neither of the two latter," it is observed, "appear to be known in the eastern States." Pryor's Red has repeatedly fruited in Western New York, where it proves to be a fine apple, but much smaller in size and less reddened than the Kentucky specimens, and considerably resembles in quality and flavor the Westfield Seeknofurther.

SAVING THE PEACH CROP.—It often happens that throughout the Ohio valley, the peach crop is destroyed by the frosts of spring, after the warm weather has rendered it liable to the disaster by an early growth. A correspondent mentions the case of several young peach trees which were incidentally severely root pruned, by digging a grape border within two feet of the trees, the buds of which did not burst until a week after those in orchards. He therefore proposes root pruning as a security against this destruction. Further north and east, where the peach crop when it fails is nearly always destroyed by the intense frost of winter, this remedy will perhaps be of less importance.

THE CHAUMONTEL PEAR.—The editor of the Genesee Farmer, who has given this pear considerable trial, and who considers it equal to any early winter variety, states that it will not succeed in the latitude of Rochester,

except on dry, warm, and rich soils. With neglected culture, the fruit is not worth gathering. The tree bears quite young, and ripens with as little care as fall pippins.

Insect on the Verbena.

Extract from a letter of DAVID THOMAS, dated 12 mo. 9, 1850:—"Last winter we had a few Verbenas of great beauty, in pots; but all perished except two. These in the spring were planted out in a bed of sand and peat, where they had grown the preceding summer most luxuriantly, but after a few weeks both perished. In the mean time I had added to the same bed four splendid ones which Luther Tucker had kindly sent me. In a few weeks, three of these also declined, and I felt quite discouraged. On taking them up, however, to *try* them in another border, I found the main stems covered with a pale green aphis! This discovery explained at once the bad condition of the plants; and having destroyed all that I could find, the Verbenas came beautifully into bloom towards the close of the season. The plant that remained in the bed was not infested.

"After these plants were potted, we found a few of the aphis on each; and now they will be regularly inspected. I presume there is nothing new in all this to such persons as have the care of green-houses; but to new beginners with house plants, the statement may possibly be of some value."

Planting on Green-Sward in Hot-Beds.

Suggestions for the more especial benefit of Market Gardeners.—In the forwarding of such plants in hot-beds, as need to be subsequently transplanted, there is much advantage in the use of green-swards. They not only afford a very natural nutriment to all plants, but they allow of subsequent removal with more facility and safety than by any other mode. They also admit of a longer retention in the seed-bed than by any other mode.

I. *Choice and Preparation of Swards.*—Choose a smooth plat in any old pasture or meadow where the soil is good, and its texture sandy, or at least loamy; since a clay sod will bake too much, and a coarse gravel will be too loose. Especial care also should be exercised in avoiding quack grass and such perennial weeds as golden-rod, since it is found that the sprouting of such things in the hot-bed is a source of much trouble. With a sharp spade cut a line about six inches deep on the side of your plat of sward ground, and then another line a foot distant. Cut out the intervening space in squares, and so on till you have the requisite number. An Irishman will cut as fast as two or three can wheel away. Sods may be cut larger or smaller than one foot to suit varying circumstances, but long and extensive use has fixed me at these dimensions as usually the best. Where many are needed, and when they are cut a considerable distance from the beds, they should be loaded upon a cart or wagon, grass-side down. I have been in the habit of using from three hundred to twelve hundred a year for the last eight years.

II. *Mode of planting upon them.*—Having arranged the manure in your beds, and slightly covered it with earth, cover it with small pine boards one foot square, disposed in regular rows. Pine is more durable than hemlock, and the knottiest boards are best as well as cheapest. In a bed thirteen feet by five and one half, I usually put five rows of twelve each. Lay a sod upon each board. Now place a small stick very accurately in the centre of each sod and then fill all the intervals with good garden earth, and make it all level. Then withdraw your sticks, one by one, making a hole in the center of each sod for your seed. Now sow and cover, and your bed is done. I have sometimes sowed my seeds thickly in loose earth in a hot-bed, and then subsequently set my plants, when small, upon my sods; but I do not like it so well.

III.—*Period of Planting, &c.*—This will depend on your after treatment. If you transfer your plants to the open ground, using perhaps only some little protection against severe winds, you may here (at Utica) plant tomatoes about the first of April, melons of all kinds the 15th, and cucumbers and summer squashes the twentieth. Your tomatoes may stand six weeks, i. e., to the middle of May; or, if set a little wider apart, until the first of June. Melons may safely remain six weeks, but cucumbers and summer squashes should never be left in the beds more than four weeks.

If, however, you are willing to make small protected fruiting beds, you may venture to start all the above two or three weeks earlier than is there indicated. Such beds, however, will hardly pay a market man, especially if each of them should require hot manure at the bottom. This, however, for the amateur gardener, is a very certain and beautiful mode of securing early fruits of all the kinds noticed above.

After the beds are up and once weeded, they will require a little earth to be thrown from without, to earth up the plants. Thin early and do not force too fast, as this will make your plants succulent and tender, and cause them to grow beyond their proscribed bounds. The success of future removal will depend exceedingly on their being stout, short-jointed plants, such as have had plenty of air, sun, and, of course, room, and have grown with only tolerable rapidity.

IV. *Transfer to the open ground.*—To effect this cheaply and rapidly, where you have many plants, five hands are necessary. Having prepared your places, station one hand at the bed, three at the wheel-barrows, if the distance is considerable, and one at the new plat where they are to be set. Let the man in the bed cut carefully, with a broad carving knife between the hills, and lift them out one by one, board and all. Then wheel, or, if the distance is short, carry them by hand, carefully to their new positions. Let the planter, having made his hill perfectly flat at the bottom and watered it, gently set in his plant, and carefully raising one side, withdraw the board, and draw up the earth. A warm damp day is best for transplanting; on such a day the plants if carefully removed, will scarcely wilt at all. It will be necessary, in most respects, to set boards up on the west, or northwest side of your rows, and also to have canvass covers, one yard square, to lay over each hill. Thus they will be protected from the cold winds that may be always expected to blow from the 20th of May to the 10th of June, as well as protected from an

occasional heavy rain, which always hurts new set plants, and also guard them from the dew on cold nights which is also very harmful. These boards and covers are not indispensible, but they will, in a course of years, much more than cover their expense. I have often removed tomato plants with fruit as large as half dollars in entire safety. But you can not thus remove melons and cucumbers.

V. *Period of Maturity.*—If the foregoing operations have been conducted with tolerable care and success, you will be able to cut cucumbers in eight or nine weeks from the seed, melons, of all sorts, in from sixteen to eighteen, and tomatoes in fifteen or sixteen weeks.

Cautions.—Do not ordinarily plant any thing between your hills, as lettuce, radish and cabbages. They will be sure to make your bed too thick and close before they are large enough to draw. They may sometimes be safely sown on the front side of the bed. A large bed of plants sown on the foregoing plan seems to exhibit, for the first week or two, a great waste of ground, but long and varied experience has convinced me that they should, from the beginning, have *all* the ground. It may be well however to plant a few seeds, of the sort that constitutes your bed, between, to serve as a dependance to supply such hills as are destroyed by corn worms, &c. during the first two weeks.

Profitableness of this plan.—A market gardener may usually make vegetables, cultivated on the foregoing plan, fairly profitable, even here (at Utica;) although the increasing facility with which all these productions are brought from New Jersey and Long Island, where they are cultivated by much cheaper modes, will in an indifferent or bad season, render them otherwise.

Gardeners in the vicinity of cities, farther removed from the great thoroughfares would find it more profitable. No man however should enter upon this plan on a large scale the first year, since there are too many delicate operations, a failure in any one of which would ruin his whole prospect.

This plan on a small scale should be prosecuted in every considerable private garden. Thus cucumbers may always be cut quite cheaply by the 25th of June, tomatoes by the 20th of July, and melons in variety by the 1st of August. C. E. G. *Utica, Jan.* 22, 1851.

Good and Bad Transplanting.

LINUS CONE gives the following statement in the Michigan Farmer, for the purpose of showing the difference between abusing a young tree and treating it as its value and nature requires:

"Some twenty years since, I purchased and set out about fifty apple trees. They were large thrifty trees, of five or six years' growth, taken up with great care and set out in the ordinary way—that is, by digging a small hole, and if the roots were too long, by twisting them round or cutting them off with a shovel, throwing the earth back and treading it down. About one-quarter of the trees died; the balance gave me about a bushel of fruit the fifth year after setting.

Again, two years ago, I set about the same number, of three years' growth; none died, some bore last year, and this year nearly all; after thinning out to prevent the trees breaking, and what was blown off by the winds, I gathered about two bushels of fine apples. Here, then was the difference in setting—one bushel from fifty trees of eleven years' growth, and two bushels from fifty trees of five years' growth."

Great as were these advantages of careful transplanting, still greater would be found the difference, by similarly contrasted experiments, between careful, clean and mellow cultivation, and neglect, weeds and grass, for the first five years after transplanting.

The two kinds of Landscape Gardening.

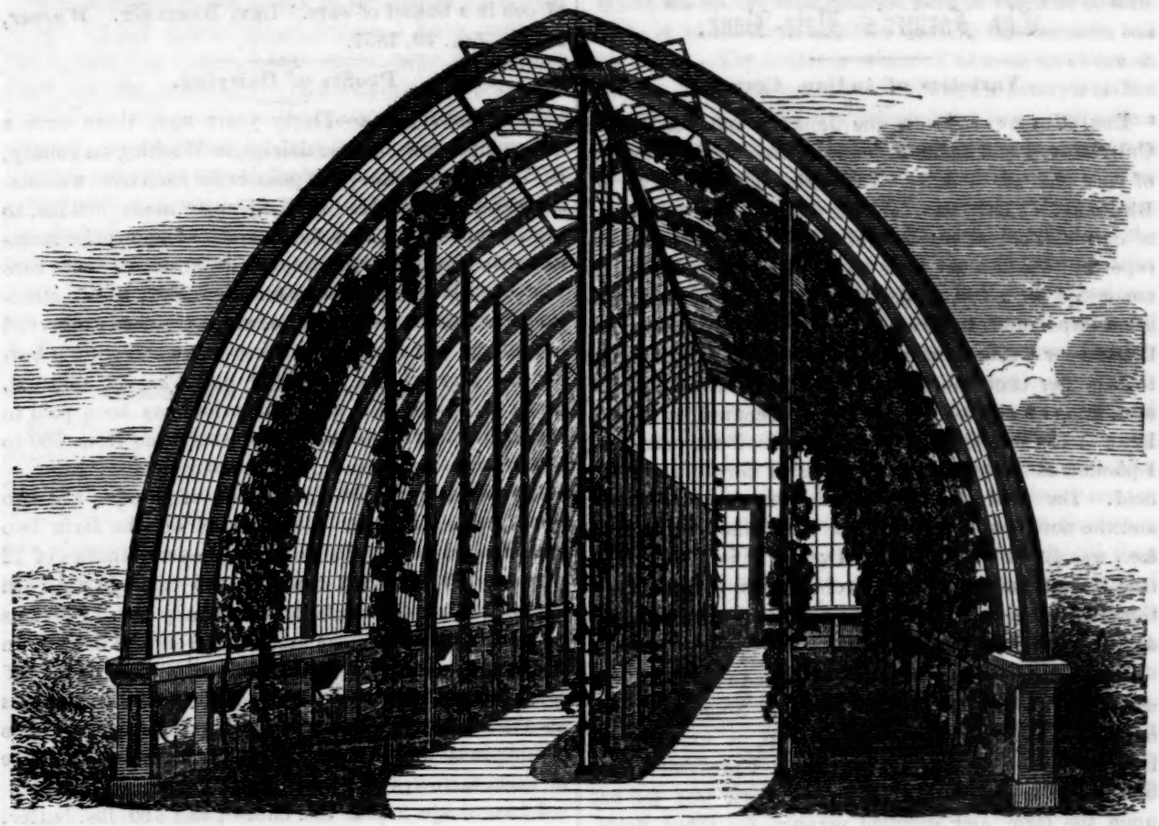
We have never seen comprised within the space of a dozen full pages, a better contrast of the natural and artificial styles, than in these few words of TUCKERMAN: "At Rome, the clipt, dense evergreens, weather-stained marbles, and humid alleys of the Villa Borghese, do not win the imagination like the vast, uncultivated campagna. A fine English park, with smooth roads intersecting natural forests, is more truly beautiful than a parterre surrounded by fantastic patterns of box, or studded with bowers and temples, like the back scene of a play."

BORROWING AND CREDIT.—A large portion of the articles which appear in the Horticultural department of the Cultivator, are extensively copied, often without any credit being given, and not unfrequently the credit is accorded to other papers; and some have even gone so far as very coolly to appropriate certain portions under their editorial heads, fully leaded, as original. This, however, is of little consequence to us; but we must be allowed to object to receiving credit, as is sometimes the case, which we do not deserve. For example, a late number of MOORE'S RURAL NEW YORKER contains a copied article, ascribed to the Cultivator, giving as *new and valuable*, the old, twenty-times-exploded humbug, of raising fruit trees of different sorts from cuttings, by dipping the lower end in wax or tallow!

THE SPANISH CHESTNUT—ERROR CORRECTED.—In the Jan. number of this paper, "botanists" are represented by a mistake of the printer, as being "surprised and amused at the result" of impregnating a sterile tree from a foreign source. Now as botanists are the last class of men to feel any surprise of the kind, the reader will understand that the important word "*not*" was omitted before the word "*surprised.*"

BEST SORTS OF THE PEA.—R. G. PARDEE, of Palmyra, N. Y., an enterprising and skilful amateur cultivator, gives the following as the best out of ten selected kinds of the pea, obtained from THORBURN of New-York. The *Early Emperor* he regards as the best very early pea, and *Hair's New Mammoth Dwarf Marrow*, as the largest, most productive, and richest pea of all.

PROTECTING HALF-HARDY SHRUBS.—The following method is recommended by the Horticulturist:—Raise a small hillock of tan or charcoal or sand, round the trunk of the shrub, and turn a barrel over it. In order to admit a little light and air, raise the north side of the barrel a couple of inches, and put a stone under it. It is not the cold, but the sunshine after the cold, which destroys half-hardy plants.



A Cold Vinery.

The accompanying engraving represents the vinery of PHILIP S. VAN RENSSELAER, Esq., at Clinton Point, near New Hamburgh, N. Y. We are informed by Mr. DOWNING, by whom the account of this vinery was first given in the *Horticulturist*, that it is one of the best models for structures of this kind, that he has ever seen. It is described as follows:—

"The engraving shows, a span-roofed house, 80 feet long, 18 feet wide, and 14 feet high. Mr. VAN RENSSELAER has deviated from the usual course, in placing it on a north-and-south, instead of an east-and-west line; and the result shows how wisely, for this climate, as the vines on both sides are equally exposed to the longest influence of the sun,—enjoying it from rising to setting; while at the hottest time of day they are all far less likely to be injured by any excess of heat than vines on the sunny side of a house facing directly south."

"The house is built entirely of wood; and while it has an exceedingly light and pleasing effect, is at the same time very strong and durable. The view of the interior, given in the above engraving, (in which we have omitted a large portion of the vines, to exhibit the construction,) shows that the roof is supported by three rows of light posts, to which, in a very simple manner the effect of clustered columns is given.

"The house rests on *locust* posts, which are as durable as a stone wall, while they offer no impediment to the free passage of the roots of the vines through the border on the outside or inside of the house.

"In the ventilation of this vinery, Mr. VAN RENSSELAER has especially improved on other structures of the same kind, which we have seen elsewhere. The current of air follows the same course as usual in houses of this kind; that is, it enters at the openings in the low wooden wall below the sashes, (boards hung on hinges,) and escapes at the moveable sashes at the top of the roof; a mode which passes a stream of fresh air, entering at one's command, over the whole growth of the vines, from the floor to the topmost branch.

"This is a 'cold vinery;" that is, one in which no fire heat is employed,—a species of structure every day coming into greater favor in this part of the country. To grow the foreign grape in the highest perfection, it is only necessary to have the temperature of the house at that command which the full sunshine, and the admission or exclusion of the outer air, gives, without resorting to fire heat; and so abundant and powerful is the sunshine in this latitude that the Muscat of Alexandria, which in many seasons requires fire heat to mature perfectly in Boston, ripens regularly and fully on the Hudson in a cold-house.

"The house contains a very complete collection of grapes, obtained from Mr. BUIST, of Philadelphia, and we were glad to learn that every vine had proved correct. Besides the standard varieties, we noticed *Deacon's Superb*—perhaps the most beautiful of all new white grapes,—the clusters very large, berries oval, and closely set. *Reine de Nice*, (not ripe when we saw it,) was also laden with large clusters of very handsome fruit. *Xeres*, another white grape, also attracted our attention by the size and beauty of its clusters; while some bunches of the *Palestine* grape, more than two feet long, made us comprehend the biblical account of the grapes of the land of Canaan."

Planting out Elms.

A Philadelphia correspondent of the Horticulturist, states, that in setting out a hundred elms from the forest, about 18 feet high, and as large as a man's arm, he fully tested the advantage of *heading back*. The tops were so handsome that he was reluctant to touch them, he accordingly left a part entire, and shortened back the remainder about one-third, to correspond with the necessary shortening of the roots outside of the large balls.

Few trees were lost; most of those with entire heads made little or no growth the first year, and many limbs died and had to be cut out. Of those cut back, all lived; and their leaves the first summer were three times as large as on the unpruned trees. They have outstripped the others so much, as to have entirely regained the symmetry and beauty of their heads.

The Farmer's Note-Book.

Varieties of Indian Corn.

EDS. CULTIVATOR—In the January number of the Cultivator, I find some account of the relative weight of corn and cob of different varieties of corn, by E. M. BRADLEY. I have no doubt the difference in the weight of corn and cob of the several kinds, is as great as there reported, and if there were no other pecuniary questions connected with this subject, it would be a matter of great importance to farmers, to always raise the small Canada or Vermont corn. But I can raise from thirty to fifty per cent more bushels of large twelve rowed corn upon an acre of good and well prepared land, than I can of the smaller eight rowed kinds. Four years ago, I planted as many as eight varieties of corn in the same field. The seed of several kinds was from Vermont and the north part of this State. The land, cultivation, &c., was all alike; the large twelve rowed, a variety that I had cultivated for several years, yielded from thirty to more than fifty per cent more of corn and fodder than the eight rowed kinds.

Some of the smaller varieties were fit to harvest three weeks earlier than the twelve rowed. Some, perhaps, may ask if the large kind did not sap, or exhaust the land more than the smaller varieties? I presume it did; but all the fodder, and most of the corn was fed out upon the farm, and supplied manure for other fields. The "large cobs" were ground at a mill and used as litter in my hovels to absorb the liquid part of the manure. The larger kinds of corn are generally later in ripening than the smaller varieties, but I have no knowledge of there having been more than two seasons (1816 and 1836) in the past half century, in which the corn crop has proved a total or nearly a total failure, and then all varieties fared about alike.

You remark, that "there is another disadvantage connected with large cobs which should be noticed. They are longer in drying, and consequently the grain is much more likely to mould and spoil, either in the crib, or while in the shock." That may all be correct; but I put my corn at harvest in a latticed corn-house, in which I have a cast iron box stove, in which I keep a fire in rainy or damp weather, and the heated air passing through the corn and out at every crevice, soon carries off the moisture of the corn—a kind of kiln-drying process. By this course my large cobs become as dry and bright as the smaller ones. I can husk ten bushels of my large kind, as quick as I can five of the smaller varieties. It is real fun, to sit down in a pleasant evening in October with half a dozen brother farmers, and husk out an 100 bushels of ears of large corn, and get through by a little after ten o'clock. At such huskings, we don't need the stimulant of alcohol in any form. It is said the small Canada and northern corn contain more oil than the large varieties, and consequently posses greater fattening qualities, than the larger kinds. If so, for working cattle and horses, who require muscle-forming food, the large kind would be preferable, and the smaller kind would be best for fattening hogs. But still, I think there is more than 8¼ per cent in favor of the large kind, and shall continue to plant it, if there is some more weight of cob in a bushel of ears. LEVI BARTLETT. *Warner, N. H., Jan.* 10, 1851.

Profits of Dairying.

EDS. CULTIVATOR—Thirty years ago, there were a few small dairies, cheese dairies, in Washington county, N. Y. At that time, 200 pounds for each cow, was considered a good yield. In 1830, some made 300 lbs. to each cow. About that time a spirit of enterprise seemed to show itself in that branch of business; more care was taken in selecting cows for the dairy, better attention was paid to feeding them, more regularity observed in milking, and more pains taken in manufacturing butter and cheese. In 1840, 400 lbs. was not unusual. Since that time, still more attention has been paid to feeding the cows, and at the present time from 500 to 600 lbs. per cow is made, and in some instances more.

My own dairy for 1850, consisted of 30 cows and two three-year-old heifers. I have kept on the farm two two-year-old heifers, for family use—two families of 12 persons. Three of my cows did not come in until 6th month, neither did the heifers for family use. Previous to that time, the families used milk from the dairy. In 9th month, a friend of mine, while arranging his lot of cows, left six with me one week. The milk of them was used in my dairy, which will make up for one of my cows coming in so late, leaving the dairy 32 in number—one of them farrow, two heifers, and two coming in late.

I have made 21,264 lbs. cheese, and 480 lbs. butter. The cheese has been sent to New-York and sold by Ludlum and Leggett, Front st. Most of it brought $7 per hundred; two small lots sold a little less; the whole averaged, after deducting the expense of boxes, transportation and commission, 6¼ dollars per hundred—making nett proceeds on 21,264 lbs.,..... $1,329 00
Butter, 480 lbs., 15 cts.,..... $72 00
Whole amount,..... $1,401 00

Being an average to each cow of 664½ lbs. cheese and 15 lbs. butter, or $43.78

I have been particular in giving the above statement, for the encouragement of those who are still on the background of improvements. Yet there are a number of dairymen in this vicinity who are making about the same amount of cheese, and are sending it to the same market. I see no reason why the increase may not continue for many years to come. OTIS DILLINGHAM. *Granville, N. Y., 1st mo. 15th,* 1851.

Destruction of Wire-Worms.

EDS. CULTIVATOR—I notice that a writer in a late English paper recommends the use of *rape-cake* in preventing the ravages of the wire-worm. The mode described, was to spread and harrow in about five hundred pounds per acre of the cake broken into about half-inch pieces. The result was stated to be, that "the wire-worms will congregate on these lumps of cake, devouring them with such avidity as to become glutted, and perish either from repletion, or from the peculiar properties of the rape, or from the combined effects of the two."

The *Working Farmer* says in reference to this recommendation, "Those who cannot procure rape-cake, can get rid of wire-worms by sowing broad-cast six bushels of refuse salt per acre."

Now in regard to the utility of the article first mentioned, for the destruction of worms, I know nothing; but in reference to salt, I have made some trials which show that the quantity of "six bushels" per acre will produce no such results as above stated. I have, in one instance, put wire-worms in a vessel with earth, and strowed salt at the rate of *forty bushels* to the acre. The worms were examined at various times for several weeks, but showed no appearance of having received any injury, or of being in the least incommoded by the salt. Several other worms were in the vessel with the wire-worms, but the salt appeared to have no effect on any of them. J. T. P.

Milk-houses and Butter-making.

Eds. Cultivator—I notice your request for information in regard to spring-houses for milk. Almost every farmer in this section of country has a spring-house, as it is almost impossible to make good butter in the summer without one. And as I have as good a one as I have seen, I will try to describe it. My spring rose in a low cave, on the east side of a hill, close to the creek. This cave, the former owner used for a spring-house, but as it was inconvenient, I quarried and blasted out the rock about twenty feet into the hill, and about fourteen feet wide, down to the level of the spring. On the west side or next to the hill, I found a perpendicular seam in the rock, that answered for the wall, nine feet in height. I built the house 12 feet by 11 in the clear, and two stories high; the lower or milk-room is 7½ feet to the joists. The upper story is about six feet high. I put the door in the east end, and a small window of six lights 8 by 10 at the side of the door. I thought the second story would add much to the coolness of the lower room, but a good ceiling might answer the purpose as well, but I had plenty of stone at hand, and I knew the upper story would be useful, and the roof would cost no more. The rock or bank covers the lower story on three sides. The spring comes in at the west end, and escapes through a crevice in the rock under the floor to the creek. We find it cool enough in the warmest weather for every purpose. Fresh meat will keep a week in it, but as it was too cool to stand to churn in it, I put a shed over the door for that purpose. But my wife said it was too warm under the shed to make good butter, and she made it inside the house, although it was a bad place for persons afflicted with the rheumatism. I then cleared off the shed and built a churning-room 6½ feet long, (which was all the room I had to the creek,) and eleven feet wide, two stories high, and to make it more comfortable I floored it with plank on the rock. There is two doors in this room, one on the north, the other on the south side, and a window with 12 lights in the east end. I thought we were fixed, but building the churning-room against the end of the milk room in which the only window was, made it too dark. I then cut a hole 2½ feet long and a foot wide in the upper floor under the window, this threw down enough of light and served as a ventilator. I boxed this hole round three feet high to prevent the dust blowing down. I find it very convenient now.

We might make a great deal of butter, but we have have never sold more than 953 lbs. in any one season. We churn all the milk, except part of the first or fore milk, in which there is little butter; this we skim and use sweet. The butter is taken off as soon as churned, and the milk well washed out of it by the hand; it is then salted with Kanawha salt pounded fine in a cloth with a hammer or a log. This has been the usual practice; but last spring we got a barrel of very fine salt from New York, which saves the trouble of pounding the Kanawha. As soon as the milk is churned, the person who makes the butter, scalds her hands to prevent the butter from sticking to them. The butter is then raised by the hand into a wooden bowl, where the milk is worked out of it, and the salt worked in. It is then covered with cold spring water and left in the spring-house till next day. It is then washed with cold water, and beaten and worked till neither milk or water remains in it. It is then ready for weighing into pounds, or for packing. That which is immediately sent to market is put in pound lumps, each wrapped in a clean white cloth. These cloths are returned, well washed and laid out to bleach till they are required again. We have had our butter engaged for some years at 15 cents per pound, and take it to Madison once a week. We are now offered 18¾ cents a pound, for all we can make, for a year. Two families get their weekly allowance put up in small earthern vessels. We leave the full one and bring home the empty one weekly. When we have butter standing in a bason or crock, we put some strong pickle on it. Our butter is very much liked by all those who have tried it.

We keep the milk vessels on the rock floor, and not in the water as most others do. We use a large Kendall churn that holds twenty gallons; it is pretty hard work turning it. Would a fly or balance wheel improve it? [No.] The spring-house is plastered, and well whitewashed, and the yard around is planted with Cedar, Cottonwood, Aspens, Catalpa, Red Bud, Service-berry, Dogwood, Black-locust, Rock-Maple, &c. &c. I have a Black-locust grafted about ten feet high with the *Robinia hispida* or Rose acacia, which I think looks very pretty when in flower.

In the winter when we have little milk, and the weather is very cold, we bring the milk to the house. We have a perfectly dry cellar, with the floor partly solid, level rock, and this place answers very well in winter.

One of my neighbors who has an excellent spring about 200 feet from his house, but 30 feet below it, has had an Hydraulic ram put up, and intends to erect a milk-house on the north side of his dwelling-house, and to have a shallow trough to run the water into and to set his milk vessels in. This will save labor. Another who has no spring convenient, has a milk-house built close by his well, and has a channel built with brick, and plastered with cement, to run along three sides of the house, close to the wall. The channel is about 1½ feet wide and six inches deep. This he pumps full of water two or three times a day or as often as it gets too warm, and he keeps the milk vessels setting in the water. He says it does pretty well. Another whose spring rises within about ten feet of the surface of the ground, sunk a cellar aroud the spring, roofed it over, made stairs down to it, and keeps the milk setting in the water. It is pretty cool, but inconvenient. I find all, except ourselves, keep the milk vessels setting in the water. A man from

near Philadelphia, Pa., has the best situation for his spring-house that I have seen. It is on the north side of a steep bank of rock, about 30 feet high. He keeps his milk vessels in the water.

If I was building a spring-house in this climate, on level ground, I would put the door and windows on the north side, and bank up the other three sides as high as the lower story. This I think, with planting trees round it, would keep it cool enough. JOHN J. CRAIG. *Madison, Indiana, Dec.* 31, 1850.

Inquiry---Wens.

EDS. CULTIVATOR—I have a cow, on whose under jaw is a large excrescence; and is said to be a *wen*. I have searched my agricultural books in vain, for a description of the wen, hoping to find a cure; and if you, or any correspondent can tell us a remedy for such a tumor, they will confer a favor, and, perhaps, save my cow.

In March, 1850, this cow was hooked rather unceremoniously, by another cow, when in her stall; and in her attempt to escape through the manger, I conclude, she injured her jaw; for I discovered immediately after this fracas, a little hard lump, about the size of a hen's egg, which increased in size until June, when it broke, and smelled very offensive. Medical counsellors prescribed an escharotic of caustic potash. This was applied during the summer, sometimes twice a day, with little or no benefit.

During September and October I paid but little attention to it; but would occasionally apply some. Now, I apply potash once in 3 or 4 days. The cow is much emaciated; and it is difficult for her to eat anything but roots and cut feed. When she ruminates, she froths at the mouth; and a stream of slabber is constantly flowing. Its size, now, is like the half of a man's head. It inspires a great repugnance; and nothing but an application of potash will cleanse it.

Who is able to prescribe a cure? S. EDWARDS TODD. *Lake Ridge, Tompkins county, N. Y.*

Legislation in Relation to Agriculture.

We have received a communication of considerable length in relation to several subjects which were alluded to by Mr. MERRIAM, in his articles published in our last volume, pp. 29, 391. Want of space obliges us to give the following extracts only, instead of the entire communication. In relation to flax-seed and linseed having been placed in the tariff of 1846 as distinct articles, the following explanation is given:

"Legislators may be too ignorant of what is most conducive to the best interests of the farmers, but the fact that flax-seed and linseed were treated as two distinct articles by the Congress of 1846, was more the result of accident than ignorance on their part. The first appearance of flax-seed and linseed as two distinct articles, was in the tariff of 1833. It was placed there in that condition by one of the most distinguished statesmen of our country, and one whose devotion to agriculture has obtained for him the title of 'The Farmer of Ashland.' It was introduced into a Congress of which Mr. NATHAN APPLETON was a member. The bill received his special attention in two or three able speeches. It finally passed that Congress, with flax-seed and linseed expressed as two distinct articles. In that condition, by accident, they were copied into the tariff act of 1846. The bill was reported to the House in April. It was amended in July, by raising the duty on flax-seed from ten to twenty per cent., and on wool at the same time from twenty-five to thirty, and in that condition passed the House. The bill was amended in the Senate and returned to the House for concurrence. The fact was then discovered that flax-seed and linseed were not only in the bill as two distinct articles, but owing to the amendment of July, were at different rates of duty. It was too late however, too make an amendment, as a return to the Senate would have been fatal to the whole bill. It was therefore allowed to pass in that shape, and a letter was addressed to the Secretary of the Treasury, inquiring at which rate under the circumstances the duty would be collected. The Secretary's letter, in answer, (which can now be found in the possession of the gentleman then representing the 27th congressional district in this State,) asserted that the duty would be collected at twenty per cent.

"When farmers shall have to rely less upon practice to the entire exclusion of theory, they will learn to appreciate such artificial helps as may be brought to bear upon agriculture by both science and legislation. They will then learn to avail themselves of existing agricultural associations, and if necessary to frame new ones, in order to investigate and ascertain what artificial helps may be made most conducive to their general good. Their wishes, expressed through such associations, will have the force of commands in obtaining, at the hands of legislators, all they can reasonably require. The association in Rhode Island, of which your Tewksbury correspondent speaks, and similar associations in every State in the Union, would be powerless if exerted against the wishes of the associated agriculturists of the country. Let the farmers be but true to themselves, and we shall hear no more that their interests are neglected in our halls of legislation."

The Philosophy of It.

By seeing an apple fall, Isaac Newton was led into a train of thought which resulted in the discovery of the laws of gravitation. This may be called an accidental discovery, but thousands had seen the same before and thought no more about it. But it required a right kind of mind to be directed to it, to pursue the investigation and learn the philosophy of it. It was *such* an accident that led to the discovery of the properties of steam. Many had seen the power of steam in lifting the lid of a tea-kettle, but there were only a few that had philosophy enough about them to comprehend the nature of such an agent for motive power, and to pursue investigations in order to test its value. The history of discovery in the sciences and arts, gives many illustrations of the manner in which persons have arrived at important results in studying the philosophy of their pursuits.

A gentleman of my acquaintaince, who has the oversight of a large workshop, is a great philosopher—in his way. He is for searching out all the whys and wherefores of his business, and in directing his workmen he not only tells them *how* to do their work, but *why* it is done so. He explains the philosophy of it, so that it is

much easier understood, such an inquiring mind is very advantageous, and the gentleman aforesaid has found it so; not only financially, but he has been "heard from" in the reports of the Patent Office.

If water can be decomposed so as to furnish a "burning fluid," it will be a *brilliant* discovery. The success of the matter is not yet fully established; to insure it, will no doubt require patience and *paine*. The scientific and the unlearned may cry out "humbug;" so they did when Fulton launched his first steamboat on the Hudson. But when the success of this *water light* is established, it will be a more brilliant discovery than that of the properties of steam, and equally as beneficial for the million.

Perhaps many farmers may think that they have nothing to do with philosophy, and that there is no necessity of studying it. Such persons are very much mistaken. It is true they have not the time to devote to books that the professional man has, but our great men were not made by books alone, but by studying nature, men and things. And no one has better opportunities to study nature than the farmer. He may if he will, find

> "Sermons in stones, tongues in trees,
> Books in the running brooks,
> And good in everything."

Not only chemical changes, but philosophical changes are constantly taking place in the farmer's presence. Those familiar occurrences, the rising of fog and the falling of dew, or rather the condensing of vapor that forms dew, are explained upon philosophical principles, and are among the many things that the farmer *sees* but does not *know*.

In every day life may be seen instances of —— philosophy if you please. If you want to see a model farmer and farm, just go with me to neighbor P.'s. Weeds do not grow in his garden or cornfields, or bushes by the side of the fences that enclose his cultivated land. Everything speaks of good management, industry and thrift. Perhaps his "bump" of order may be fully developed, but that is not all the philosophy of it. He is a man of information, "takes the papers" of course, and brings the result of his observation, intelligence and reading into active service; hence that state of things about his premises that is so pleasant to behold.

Shall we pass on to neighbor O.'s. In passing his premises you might suppose you were going "by the field of the slothful." Nothing in place; work done in a hurry, and consequently half done; the cultivated crops choked by weeds, *and so forth*, to the end of the chapter. He don't take the papers, not he, and as for "book farming" he don't believe in it. His father raised good corn, and had fat hogs, and books did him no good, and he can do as well as his father did. He could not afford to take an agricultural paper, if he wanted to, and he could not get time to read it if he did, and as for "slicking up round," and being so "awful nice," it did not amount to anything. Mistaken man, "there are more things in heaven and earth than are dreamed of in *his* philosophy." W. L. Eaton.

Talking.—The best rules to form a young man are, to talk little, to hear much, to reflect alone upon what has passed in company, to distrust one's own opinions and value others that deserve it.

Digging Wells.

BY DAVID THOMAS.

The great denuding process left the rocks of the Hamilton group in this neighborhood with very irregular surfaces,—such as narrow vales, or basins of many acres in extent, and sometimes to the depth of more than 50 feet; but it is no less remarkable that none of these rocks project above the *northern drift* which has given us so smooth a country, although in some places they appear very near the surface. As we recede from the Cayuga Lake however, the covering of drift deepens, and these remarks chiefly apply within the first three miles.

But so smooth a surface is unfavorable to the issuing forth of springs or fountains, and comparatively few are found in this district. To dig wells has therefore been the general resort. When convenience has directed the excavation into this state—which is very compact—the chance for obtaining durable water is small; and of four wells which were dug on my farm, scarcely one has been more than a reservior in drouth, the whole contents at such times having been emptied to the bottom. Afterwards indeed, we sunk a well (50 feet) where the drift was deep enough without reaching the rock, and there we have never had occasion to measure the supply.

In 1826 we dug a well at the kitchen door 20 feet deep. The first 8 feet were through the drift, when we came to polished state, slightly inclined, over which a little pure water was soaking or moving westward. On this was all our hopes for a supply except in wet weather, when it would be greatly increased; and the remaining 12 feet which we cut into the rock, was only intended as a reservior. The value of this effort however, was greatly diminished by *filling up three quarters of the excavation with the wall*,* so that every dry season we were scant of water.

In 1844 we dug another well, about three rods from the former on the opposite side of the house; and having become sensible of our error in starting the wall from the bottom, we began it *on the top of the rock*, which occurred 10 feet below the surface. To do this conveniently however, required some preparation. Having dug putlog holes at proper distances round the circumference, close above the rock, we excavated it downwards 9½ feet when water came in through a small cleft, yielding scarcely two pailfuls in 24 hours. We could go no deeper without blasting, which was not deemed expedient. We then placed the putlogs, and *laid a tight floor* to receive the earth which should be cut from the sides in preparing the foundation for the wall. On the rock, the excavation was 18 inches wide, forming a circular shelf, but it contracted upwards to the height of 6 feet, like the lower part of a cone. Above this point, the well was not widened, so that the wall would leave the opening or mouth only 3 feet in diameter, though it would be 6 feet across at its foundation.

Having provided shapely stone, and considering that this wall would be a horizontal arch, bracing itself at

* Cylinders having the same altitude are to each other as their bases; and their bases are to each other as the squares of their diameters. Hence the open part of the well (or 3 feet squared,) is to the whole excavation, (or 6 feet squared) as 9 is to 36—or as 1 is to 4.

every point,—I was surprised when the well-digger refused to build it. "No—he had walled wells, and knew now, but this leaning wall would certainly *cave in*, and he would not undertake it." No reasoning could overcome his apprehensions, and the work was at a stand, when an old carpenter who happened to be present, offered his services—he was not afraid, and the well-digger served as tender.

Now as this wall appears to stand as firmly as any other in this region; and as the well has always furnished abundance of the best water,—I have thought it might be useful to make a record of the facts, as I know of no other attempt on this plan.

And I am now satisfied that if our former well had been walled up in the same manner, we should always have had plenty of water. Let us examine the grounds of this opinion. Suppose at the commencement of a drouth there is 10 feet of water, which we may call in round numbers equal to 280 cubic feet, or 560 pailfuls. Then if 5 pailfuls a day be required, this reservoir would yield them for 115 days; but as the water dripping in from the top of the rock, would be equal to one pailful, there would be a sufficiency for 140 days.

But as no drouth in this land has been known to continue through that length of time, it is nearly certain that by this improvement and at that rate, we should have a reservior not to be exhausted; but on the contrary, it would yield 10 pailfuls a day through any drouth that I ever remember in Cayuga county; and let me add that such water is of the purest and sweetest throughout the entire summer and autumn. *Greatfield, Cayuga county, 1st mo. 20., 1851.*

Cheap and Expeditious mode of Seed-Sowing.

Gardners frequently wish to sow small seeds in too considerable a quantity to be done cheaply by the fingers, and yet not in sufficient quantities to justify the purchase of an expensive seed-sower.

Let such persons pursue the following method:

The ground being well prepared by the plow, harrow, and, if need be, the rake, construct—

I. *A Marker.*—Take a 3 by 4 scantlin, 6 or 8 feet long—bore holes, at three inches distance, with an inch augur; add a pole to one side with a peg through the extreme end for a handle. Now form teeth, made a little wedge shaped at the bottom. Set these 6, 9, 12, 15, or 18 inches distance as you wish your rows, and your marker is done. It is in shape, you will perceive, like a great rake.

Go to one side of your plat, fix your eye on some mark at the other end, advance with a steady step, drawing your marker behind you. A little practice will enable you to do this without varying three inches from a straight line. Turn round and set your inside tooth in the last mark made, and go back. If you are alone, make but a few marks before you begin to sow.

II. *The Seed-Sower.*—If you have no time or disposition to go to a tinner to get a handsome instrument, proceed thus: Take a common tin cannister with a steeple top. Pierce a round smooth hole through the cover, of the size of a small pea, or, what is better, get three or four covers made to it, with holes of different sizes to suit different seeds. Now fasten your cannister with a string to a piece of a barrel stave to serve as a handle.

III. *Preparation of the Seed, and Sowing.*—Have on hand a half barrel of sand, dry and not too fine. Sift a few quarts, and be careful that not a stick, straw, or piece of gravel is left behind, as they would choke your sower.

Mingle your seed with from five to ten times its quantity of sand; fill your sower by means of a tunnel; put on your cover, advance to the first row, insert your sower, and walk off. You will soon learn how to proportion your sand, the size of the hole, and the speed of your walking. The point to be aimed at is to be able to walk with a quick step, and yet have your seed spread just right. The great trouble is to make a beginning. A little experience will make all easy and rapid.

IV. *Covering the Seed.*—A hay rake inverted, or what is better, a bit of wood a little longer and heavier, fastened to an old rake handle will cover rapidly.

But if your soil is in good tilth, and your operations have been managed carefully, you may cover most of the seeds, to be sown by this method, with a roller. Even if you cover by the former method, there are numerous and great advantages in rolling your whole plat before you leave it. Your seed will spring up more evenly, your first weeding will be done more safely and expeditiously, and your seed will come with more certainty especially in dry weather. With such a marker, sower and roller, I think two men would sow at least one and and a half acres of turneps or onions in a day. Indeed, I have done all the sowing of a large market garden in this way for some years, although I think I should find my advantage in using a regular seed-sower, especially as it would be accommodated to a greater variety of seeds than the simple method which I have used. C. E. G. *Utica, Jan. 24th, 1851.*

The Crops of New-England.

I see it stated in some quarters, that New-England can no longer raise grain with profit. If it is meant by this that grain can not be the staple production, we have no objection to the proposition. DANIEL WEBSTER long since, with his usual keen perception, said that grazing must be the occupation of eastern farmers. Still we think there can be no question but that corn and oats can be raised with profit in our vallies, and even on our hills,—not for the home consumption of the whole population, but for the supply of the farmers themselves. There is much sense in the maxim, "Have two strings to your bow." The cultivation of grain will fill up the chinks of time, and the profits of it will fill up the chinks in the pocket. If any one is not satisfied of this, let him neglect his corn-patch for one year, and buy corn to fatten his pork, and meal to make his Johnycake, and he will probably find it more difficult to raise the cash than it would have been to raise the corn. A variety in our productions, conduces to independence and comfort. If one crop fails, we have another to lean upon; and there is a comfort in partaking of one's own products, which the purchased article does not furnish. It is a laudable pride that the farmer feels, as he says to his guest, "this bread was made of my own wheat," or "this fruit is some of my own raising." But I took

up my pen particularly to say that the multiplied changes going on around us, demand a corresponding change in the crops. The farmer must have his eyes open, and adapt his products to the changing market. What profits would the merchant make, who persisted in purchasing the same articles year after year, without consulting the wants of his customers? However honest and attentive the tradesman is, these old fashioned goods must lie on the shelf, or be sold without profit. In like manner the producer who persists in cultivating his land in the same manner that his father did before him, and raising only those articles that custom has made him familiar with, must be content to fall in the rear, and see himself outstripped by his neighbor, who has an eye open to the change going on around him. Manufacturing establishments are springing up like mushrooms, in our midst, and the iron horse comes snorting through our farms, laden with the produce of more fertile lands, and it becomes us to note the effect of these things. We must change the step when the tune changes. I know we Yankees are apt to pride ourselves in being shrewd, and ever ready to turn a penny; but there are others shrewd beside ourselves. The world is jogging on, and we must keep up with it. In the article of wool, which has been one of our staples, we cannot hope to compete much longer with the prairie farmer, when facilities for producing and transporting has so much increased.

In dairy products also, it cannot be deenied that our western friends, have the advantage of us. To what then shall we turn our attention? some one may ask with a feeling of despondency. I would by no means discourage the eastern farmer. The list of our products is a long one, and we only need to make a judicious selection, and cultivate with skill, and our profit and loss account will stimulate us to further effort. In the vicinity of manufacturers, garden products will pay much better than the corn and wheat of Ohio. True the market may be limited for these articles, but the adage that "Demand creates supply," is no more true than its converse, supply creates demand. Few families enjoy through the year, the various vegetables, and the reason is they cannot be obtained. Fresh meat also must be furnished to eastern markets mainly by eastern producers. The various fruits too, must be supplied mostly by home production, and the supply of these never equals the demand. I need not particularise more. Each must judge for himself what products his market and soil demand. Our census shows a rapid increase of population, and an increase of wealth in still greater ratio. The times demand increased skill and energy on the part of the tiller of the soil—not merely bodily labor, but mental activity, a mind awake to the capacities and wants of the age. BERKSHIRE.

FRENCH SHEEP-DOGS.—An English traveller speaks of the dogs which are used in Normandy, in the management of sheep, as being uncommonly valuable. He thus describes one: "The animal was some cross of the breed commonly known in England as lurchers; and the quick sparkle of the eye, and the ready and eager intelligence of his face as he watched his master, and flew round and round the flock at the slightest gesture, or merely mumbled word of direction, were really beautiful to see. The shepherd told me he was a most valuable dog—he would not sell him for 200 francs."

ANSWERS TO INQUIRIES.

PROTECTING FRUIT-TREES FROM SHEEP, AND FROM THE SUN.—*G. M.*, Lowell, Mass. The plan you speak of, nailing three boards, uprightly, round each tree, would be the best protection, both against sheep and the hot sun. It would not be safe to trust sheep in a young orchard without guarding the trees in some way. After the trees have rough bark, sheep will seldom gnaw them. Sometimes they will run in a young orchard for months without barking the trees; but while the trees are small, there is always a liability of the bark being eaten off by sheep, if they are allowed to run in the orchard.

EGG-HATCHING MACHINE.—"*Constant Reader*," Springfield, Mass. We cannot tell where such an article as you inquire for can be had. All those which have come under our observation, we are sorry to say, have not answered the expectations which were at first raised in regard to them.

GRASS FOR MEADOWS.—"*A Correspondent*" inquires of what kinds of grass Mr. CLAPP's meadow, mentioned in our January number, page 54, was composed We have understood it was chiefly *Phleum pratense*, timothy, (herds-grass of New-England,) and *Agrostis vulgaris*, red-top. If this is not so, Mr. C. will please inform us. The kinds of clover seed inquired for, (medium or southern and white,) as well as red-top grass seed, can be had at most seed-stores in New-York, Boston, or this city.

CARROTS.—*A. J. L.*, Williamsport, Pa. Rather light loams are best for carrots. To produce a large crop, the oil should be rich; that which has been well manured for a crop of Indian corn the previous season, will do well; if more manure is added for the carrots, it should be well mixed with the soil. The ground should be plowed deep and fine, and the surface smoothed and cleared from lumps by the roller and light harrow, before the seed is sown. The crop may be put in early in May. Be sure to have good seed of the previous year's growth. About two pounds per acre will be required. Its cost is usually about a dollar a pound. It may be sown with a drill-barrow in rows sixteen inches apart. For a field crop, the plants may be thinned to spaces of three inches in the row, and they should be kept clear of weeds.

MULTICOLE RYE.—*H. & J. B.*, Springfield, Mass. This grain may be had of Emery & Co., Albany, at $1 per bushel.

CORN-SHELLER.—*J. H. C.*, East-Windsor, Ct. Smith's corn-sheller is adapted to horse-power, and is capable of shelling 100 bushels an hour. It may be fed by shovels or baskets. It is for sale by Emery & Co., Albany—price $50.

MARL OF NEW-JERSEY.—C. H., Painsville, Ohio. The "blue marl" of which you speak as being found in New-Jersey, is probably what geologists term green-sand. Its value as a fertilizer is chiefly due to potash, of which it contains a large proportion. We are not aware that the blue clay of Northern Ohio contains potash in any proportion that would render it valuable as manure.

WATER LIME.—R. H. V. R., Butternuts, N. Y. This article in its natural state, is usually mixed more or less with sand and slate. It contains also magnesia and iron, to which properties its cementing power is supposed to

be in a considerable degree due. We have heard of no instances where the lime, used for water cement has been applied as manure; but it may be remarked that its most distinguishing principle, magnesia, is a constituent of all grains—wheat, especially, containing it in a striking proportion. Hence it may reasonably be inferred that it would be useful as a manure on soils which were deficient in the elements of wheat.

AYRSHIRE BULL.—C. H. A. C., Chesterfield county, Va. We know of but one Ayrshire bull for sale in this vicinity. He will be three years old this spring, and would be sold for $100. He is a good specimen of the breed.

AGRICULTURAL LIBRARY.—D. S., Old Point Comfort, L. I. In addition to the best agricultural periodicals of this country, we would recommend "The Farmer's Guide," by Henry Stephens, with notes by Prof. Norton, now in course of publication by L. Scott & Co., New-York; Prof. Norton's "Elements of Scientific Agriculture;" "Johnston's Lectures;" "Knight's Farmer's Library," two volumes, embracing "The Ox," "The Sheep," "The Hog," "Poultry" and "Bees," by Martin, and "The Horse," and "The Dog," by Youatt.

DRAINING-TILES.—J. C., Princeton, N. J. By reference to Mr. Babcock's advertisement in our February number, you will obtain the information you wish.

LEAD PIPES FOR WATER.—J. C. Jr., North Hoosick, N. Y. Soft, or *pure* water, sometimes causes the decay of lead pipes—the oxygen combining with and decomposing the lead. With hard water, or that which contains mineral salts—as lime, iron, &c., an incrustation is generally formed on the lead which preserves it. Lead pipe for water is sometimes imbedded in hydraulic mortar or cement, but from personal observation we cannot say whether it prevents the decay of the pipe.

Books for Premiums.

Several of our Agents have requested us to send them Catalogues of Books from which they can select their Premiums; but as we have no Catalogues, we annex the following list, from which selections may be made:

American Farmer's Encyclopedia, $4.
Gardner's Farmer's Dictionary, $1.50.
Allen's American Farm-Book, $1.
Buel's Farmer's Companion, 75 cents.
Colman's European Agriculture, 2 vols., $5.
Smith's Productive Farming, 50 cents.
Boussingault's Rural Economy, $1.50.
Dana's Muck Manual, 50 cents.
Faulkner's Treatise on Manures, 50 cents.
Johnston's Lectures on Agricultural Chemistry, $1.25, and his Lectures before the N. Y. S. Ag. Society, 75 cents.
Norton's Elements of Scientific Agriculture, 50 cents.
Thompson on the Food of Animals, 75 cents.
Downing's Fruit and Fruit Trees of America, $1.50.
Thomas' American Fruit Culturist, $1.
Cole's American Fruit Book, 50 cents.
Downing's Country Houses, $1—Cottage Residences, $2—Landscape Gardening, $3.50.
Allen's Treatise on the Grape Vine, $1.
Johnson's Dictionary of Gardening, $2.25.
Breck's Book of Flowers, 75 cents.
Kitchen Gardener's Text Book, 50 cents.
Allen's Diseases of Domestic Animals, 75 cents.
Cole's American Veterinarian, 50 cents.
Bement's Poulterer's Companion, $1.
Browne's American Poultry-Yard, $1.
The American Fowl Breeder, 25 cents.
Guenon's Treatise on Milch Cows, 62½ cents.
Miner's Bee-keeper's Manual, $1.
Morrell's American Shepherd, $1.
Youatt on the Pig, 65 cents.
Leuchar's Treatise on Heating Hot-houses, $1.
Miss Beecher's Domestic Economy, and Domestic Receipt Book, 75 cents each.
Webster's large Dictionary, new edition, $6.
The Horticulturist, $3.50 per vol., bound.
The Cultivator, $1.25 per vol., bound.

NOTES FOR THE MONTH.

ACKNOWLEDGMENTS.—We have received communications since our last, from G. J., J. W. Proctor, Otis Dillingham, Levi Bartlett, G. M., David Thomas, A Young Housewife, An Inexperienced Fruit-grower, R. T. Robinson, John S. Pettibone, A Subscriber, A. J. Little, A Constant Reader, J. J. Craig, S. E. Todd, D. T., J. Chase Jr., J. C. J., C. E. G., J. T. P., W. L. Eaton, Hon. F. Holbrook, Prof. J. P. Norton, W. P., Berkshire, Levi Durand, R. D. Weeks, F. B. Fancher, Wm. Bacon, I. Hildreth, G. B. D., John Townley, Eds. Am. Agriculturist, A Wool-Grower.

BOOKS, PAMPHLETS, &c. have been received as follows: Report of Hort. Exhibition at Salem, Mass., Sept. 1850, from the Essex Institute.——Transactions of the Licking county (O.) Ag. Society, for 1850.——Catalogue of the Nursery of GEO. B. DEACON, Burlington, N. J.——Meshullam! or Tidings from Jerusalem, from the Author.——The Farmer's Guide, No. 13, from L. SCOTT & Co., publishers, New-York.——Harper's New Monthly Magazine; Lossing's Pictorial Field Book of the Revolution, No. 11 and Harper's Illustrated Catalogue, from HARPER & BROTHERS, New-York.

TO CORRESPONDENTS.—Several communications intended for this number, are necessarily deferred till next month. Among them, those from the Eds. Am. Agriculturist, R. T. Bobinson, and some others. Answers to several Inquiries, are also unavoidably postponed.

NEW-YORK STATE AGRICULTURAL SOCIETY.—In our notice of the doings of the Society last month, we inadvertently omitted to state that a delegation to attend the World's Fair had been appointed, consisting of Hon. MARTIN VAN BUREN, Hon. JOHN A. KING, E. P. PRENTICE, Esq., HARVEY BALDWIN, Esq., and B. P. JOHNSON, Esq. At the meeting of the Executive Board for February, it was announced that Mr. VAN BUREN had declined accepting the station, and the vacancy which was thus occasioned, was filled by the appointment of HENRY WAGER, Esq. At the same meeting the final location of the next State Fair at Rochester was agreed on—the citizens of that place having complied with the preliminary requisitions of the Society.

APPLES FOR STOCK.—In a late excursion through a portion of Otsego county, (an account of which is unavoidably deferred,) we noticed that many farmers were in the practice of feeding apples to their stock. Calves, of last spring, and sheep, were the animals to which they were more commonly given. All agreed that they were very beneficial for this purpose. The apples were gathered in the fall and secured either in a cellar under the barn, or protected from frost in some other convenient situation. The quantity fed to calves, was about half a peck to each, daily. They evidently greatly promoted the thrift of the animals,—not only by the nutriment which they imparted, but also by their healthful action as a condiment and gentle cathartic—sharpening the appetite and causing the dry hay to be better digested and assimilated. We have seldom seen calves which made a better appearance in mid-winter, than several

lots shown us that had been fed in this way. We do not hesitate to say, that every farmer would find an acre of ground appropriated to raising apples for stock, one of the most profitable investments of his capital and labor.

MODELS OF FRUIT.—Mr. T. GLOVER, of Fishkill Landing, has made some important improvements in the art of modelling fruits. At the late meeting of the State Ag. Society, he presented a collection comprising models of apples, pears, plums, nectarines, cherries, strawberries, &c., each forming such a beautiful and perfect representation of the fruit, that it required close inspection to detect the deceit. Such models may be made highly valuable in furnishing correct ideas of the peculiar characters of the various kinds of fruit, being in this respect much superior to drawings or paintings. Cabinets may in this way be obtained of the most desirable varieties, which would serve as standards for comparison, and which would be of great utility in conveying correct information on the subject. We are pleased to learn that the State Society has taken measures to procure models of this kind.

MAPLE MOLASSES.—Mr. H. B. BARTLETT, of Paris Hill, Oneida county, exhibited at the late annual meeting of the New-York State Ag. Society, a specimen of maple molasses, which was superior to any we have ever seen. It was made in 1850, and Mr. B. stated that he frequently kept it till it was two years old; that it never needed scalding, but would keep any length of time in any climate. We understand that the details of the process of manufacture will be furnished by Mr. B. for the *Transactions*.

BUDDING PEACH TREES.—In our volume for 1849, p. 182, R. H. DRAKE, in answer to an inquiry in regard to the destruction of newly set peach buds by the winter, states that to obviate this result he commences budding early in August, or as soon as the fruit buds can be distinguished from the leaf buds, and that by thus allowing the bud more time to adapt itself to its new situation, it seldom fails. CALEB SMITH, of Shelburne, Mass., writes us that he has adopted this mode with good success, and he tenders his thanks to Mr. DRAKE for the suggestion.

"BOYS DEPARTMENT."—In reference to the suggestion of a correspondent, we have only to say that we shall at all times be pleased to receive articles from the youth which are to become the future farmers of the country; and whenever a sufficiency of material shall justify it, we will cheerfully devote a portion of our journal to a "Boys' Department." The remark that, "it would be well for boys to propose questions for such a department to be answered by others," is a good one, and we shall be pleased to see the idea carried into effect.

FARMS IN AMHERST COUNTY, VA.—Mr. W. A. STAPLES, of this county, writes us—"Many farmers from the valley of Virginia and from Maryland are now settling amongst us—pleased, in most instances, beyond their expectations. We have on two sides of our county, the James river and Kanawha canal. The railroad from Lyncaburgh to Tennessee is rapidly progressing; one from Lynchburgh through the middle of the county to Charlottesville—a distance of only 60 miles—will complete the link in the chain of railroad communication from the north to the south-west. Farms with excellent improvements, and producing tolerably good crops, are worth from $10 to $15 per acre; some with poor improvements, and poorer soil, $3 to $5 per acre. A farm 6½ miles from Lynchburgh, of over 600 acres, half cleared, balance well timbered, but with sorry houses and fences, land lying well but poor, was sold at auction a month ago, on time for $3. Prices of produce here are as follows: Corn 70 cents, oats 60 cents, potatoes 75 to 100 per bushel, hay $20 per ton."

TO DESTROY THE WOOLY APHIS.—Mr. JAMES WILSON, of this city, well known as an observing and successful gardener and horticulturist, informs us that this insect can be readily got rid of by the use of fish-oil. With a brush, he puts a little of the oil on the insects, which kills those it touches, and causes the others to leave the tree. It is not necessary to use so much oil as would injure the tree.

GOOD SHEEP.—Mr. G. A. HANCHET, of West Stockholm, St. Lawrence county, N. Y., gives us an account of three sheep which he killed last fall. One was five years old, the others only a year and a half. They were killed immediately from the pasture, without any feeding, and the carcasses and pelts sold for $15,94. The dressed weight of the two youngest, was 107 lbs., that of the other 70 lbs.

ALDERNEY COW.—R. L. COLT, Esq., of Paterson, N. J., informs us that he has an Alderney cow, four years old, which, three weeks after having produced her second calf, gave eighteen quarts of "rich yellow milk" per day, weighing thirty-six pounds, and at one milking on the 16th of January, nearly five months after calving, gave five and a-half quarts of milk, weighing ten and a-half pounds.

BIOGRAPHICAL MEMOIRS.—The readers of the former volumes of The Cultivator, have noticed that it is one of our legitimate objects to furnish sketches of men who have been particularly distinguished for the benefits they have conferred on the agricultural interest of the country. In accordance with this object, we gave, in our volume for 1844, a brief memoir of Dr. SAML. L. MITCHELL, and in 1848, similar papers in reference to Judge BUEL, ELKANAH WATSON, and THOS. G. FESSENDEN. It will be seen that we have commenced in this number, the publication of a memoir of Col. TIMOTHY PICKERING, from the able pen of Hon. JOHN W. PROCTOR. We are confident that the history of that eminent patriot and farmer, will be read with interest and benefit.

TAPLIN'S HORSE-POWER.—The original patent for this invention, was left at the office of The Cultivator about nine years ago, and has remained to this time. The person to whom it belongs, can have it on application.

FUMIGATING POTATOES TO PREVENT ROT.—We have noticed the recommendation of some person to fumigate potatoes with sulphur, to destroy the spores of fungi, which some suppose is the cause of the disease, or rot. At a late discussion at the State House in Boston, we learn from the Plowman, that the Rev. Mr. BARRY stated he had tried this mode. "He took a large box, made

holes in the bottom, and fumigated some four hours with sulphur, according to the recommendation of the State Chemist. More rotted among the fumigated potatoes than among those not fumigated, three to one."

WIRE FENCE—CORRECTION.—Mr. GEORGE MANSFIELD of Lowell, Mass., writes us to correct a mistake which occurred in his article on wire fence, as printed in last volume, page 278. In reference to straining the wire, it is said—"Insert your wire through the lever and post," &c. The words *lever and*, should have been omitted. Mr. M. says, "The strainer is made like an old fashioned wrench used to strain a bed-cord, with a small hole in the lower end, instead of a *slot*, as in the bed-wrench."

WINTER WHEAT IN VERMONT.—That part of this state bordering on Lake Champlain, produced, for many years after it was brought into cultivation, excellent crops of winter wheat, but the prevalence of the wheat midge (weevil) from 1830 to 1845, caused such injury to the crop, that little was grown. Within the last few years, the insect has greatly disappeared, and the cultivation of wheat has been resumed with success. WILLETS KEESE, of Peru, N. Y., writes that in a late tour through several towns in the section spoken of, he ascertained that very fine crops of winter wheat were raised last season—several reaching 40 bushels and upwards per acre; and that J. Holmes, of Charlotte, sold fifty-six dollars worth from an acre of ground.

PENNSYLVANIA.—At a convention held at Harrisburgh on the 21st of January, a State Agricultural Society was organized, and a memorial adopted to be presented to the Legislature for an appropriation for the benefit of Agricultural Societies. The Hon. FREDERICK WATTS, was chosen President, with 24 Vice-Presidents—Dr. Elwyn, of Philadelphia, Cor. Sec'y; R. C. Walker, Alleghany county, Rec. Sec'y, and G. H. Bucher, Treasurer.

BREEDS OF COWS FOR BUTTER.—The *American Agriculturist*, speaking of the products of the "Oaks cow" and the "Nourse cow," says, "We can show in many *short-horn* herds, numerous instances of larger yielders, whether of milk or butter." In 1814, the milk of the Oaks cow made 300 lbs. of butter; in 1815, 400 lbs.; in 1816, 484¼ lbs. According to Mr. COLMAN, the Nourse cow yielded 14 lbs. of butter in a week and 224 lbs. in four successive months. Will the *Agriculturist* be good enough to show us the "*numerous instances of larger yielders from short-horn herds?*"

"BURRALL'S REAPER."—In our advertising department, will be found Mr. BURRALL'S description of this machine. We have never seen it in operation, but those who have tried it, speak of it in very favorable terms. At the State Fair at Syracuse, it received a diploma as "the best grain reaper for general purposes and the farming interest of New-York"—Mr. MCCORMICK'S receiving the same award, as being adapted to "extensive farmers."

MORGAN HORSE "BLACK-HAWK."—By reference to our advertising columns, it will be seen that this noted animal is at his old stand. His reputation as the sire of valuable stock, is undiminished.

ESSEX COUNTY (N. Y.) AGRICULTURAL SOCIETY.—This Society has resolved to hold its annual exhibitions at Elizabethtown for the next five years. The president of this society is W. C. WATSON, of Port Kent; the secretary is ROBERT S. HALE, of Elizabethtown.

CHEAPEST MODE OF LIGHTING A HOUSE.—"A YOUNG HOUSEKEEPER" wishes information in regard to the cheapest and best mode of lighting a house—whether by oil, lard, camphene, or candles, and the best apparatus for burning the various articles. We shall be glad to hear from *experienced* "housekeepers" on the subject.

BROWN CORN.—We are able to inform our correspondent "H. R." of Geneva, that he can be supplied with this variety of corn—from seed received direct from Lake Winnipissiogee two years since—on application to WM. W. STACEY, Aubrey Farm, Fayette, Seneca co. Mr. S. has also the large and prolific white corn.

MULES VS. HORSES.—A correspondent of the South Carolina *Farmer* and *Planter*, who appears to have had much experience in raising mules and horses, states that he has kept a particular account of the expenses of each, for the last ten years, and he says "*in no instance* have I ever been able to bring the horse to the plow, for less than from fifty to sixty dollars; on the other hand, I *have invariably* brought the mule to the collar for twenty to twenty-five dollars." In regard to the comparative expense of keeping, he says "the mule can be kept in as good condition as the horse, and will perform the same labor, however severe, *in the same time and on about one-half the feed*." In addition to this, the mule will out-live the horse by fifteen to twenty years, and is seldom sick or crippled.

FOWLS FOR FLORIDA.—Our attention was called a few days since to two pair of beautiful game fowls which were passing *via* express to Dr. T. Y. HENRY, of Quincy, Fa. They were from Mr. T. C. ABRAHAMS of West Troy.

☞ Persons wishing to purchase choice fowls will find several kinds advertised by Mr. PLATT, in this number.

Prince's

Linnæan Botanic Gardens and Nurseries, Flushing, N. Y.

WM. R. PRINCE & CO., successors of Wm. Prince, and sole proprietors of his great collection, offer the largest and choicest assortment of Fruit and Ornamental Trees and Plants to be found in America, and will transmit Descriptive Catalogues to all post-paid applicants desirous to purchase. The choicest varieties of Fruits, which are scarce elsewhere, are here extensively cultivated, and applicants will not be disappointed. Every desirable Fruit enumerated by Downing, Manning, Kenrick, Hovey, and in the Catalogues of Europe, can be supplied. Of the finest varieties of Pears, 50,000 trees can be supplied, of which 15,000 are of bearing age, on both the Pear and the Quince. Purchasers are solicited to visit the establishment and judge for themselves, but the same attention will be paid to the selection for all distant correspondents. The prices are as low and mostly lower than trees of equal quality can be obtained elsewhere. And above five hundred varieties of Fruit Trees, and a much larger number of Ornamental Trees, can be supplied, that cannot be obtained elsewhere in the Union, except in a few casual instances. Every premium for Roses and Strawberries was awarded to us by the Long Island Horticultural Society.

A wholesale Catalogue will be sent to all Venders.

The transportation to the west is now moderate, and the Agent's Receipt will be sent to each purchaser, which will prevent the impossibility of loss. Cash or a reference can be sent with the order, by those who are strangers to us. March 1, 1851—2t

GUANO.

WE are in daily expectation of arrivals of Peruvian Guano. Those wishing to order, will do well to do so at the earliest moment.

A. B. ALLEN & CO.,
New-York Agricultural Warehouse and Seed Store,
Feb. 1—3t. 189 & 191 Water st.

To Fruit Growers.

THE Subscriber cultivates at his various Nurseries, and has for sale at his residence, *Eustis-Street*, Roxbury, Mass, all the choice varieties of the PEAR, APPLE, PLUM, CHERRY, PEACH, and other Fruit Trees. *Raspberries, Gooseberries, Currants, Grape Vines, Strawberries, Asparagus Roots, &c., &c.* Also several thousand Pear Trees on the Quince—one, two, three, four, and five years from the bud. Particular at ention paid to the cultivation of the PEAR. Persons wishing extra sized trees, or trees on Quince stock in a bearing state, will please call at the Nurseries and make their own selection.

Buckthorn for Hedges—One, two and three years old. Ornamental Trees, Shrubs and Roses, Herbaceous Plants, Pæonies, &c.

Scions of all the varieties of the Pear of established reputation, and also of other fruits. The whole for sale at the market price.

SAMUEL WALKER,
Roxbury, March 1, 1851—2t. Roxbury, Mass.

Prouty & Mears' Celebrated Premium Centre Draught Plows.

A LARGE assortment can be found at the State Agricultural Warehouse, No. 25 Cliff street, New York.
Mar. 1—1t. BARR & ATTERBURY.

AGRICULTURAL WAREHOUSE,

193 *Front Street, New-York.*

THE Subscriber would call the attention of those purchasing, to his extensive assortment of *AGRICULTURAL IMPLEMENTS.*

"*Highest Premium*" *Plows*, which were awarded the highest premiums in 1846, 1847, 1848, 1849, and 1850.

Also, *Eagle Center-Draught*, and all Plows in general use.

Corn Shellers, with single and double hoppers.

Straw Cutters—Hoveys's, Green's, Sinclair's and others.

Horse Powers—Badger's Improved, and Bogardus' Patents.

Fan Mills—Grant's Premium, and Clow's Rotary Screw.

Threshing Machines—Corn and Cob Mills, Grist Mills, Cultivators, Harrows, Grain Cradles, Rakes, Scythes, Forks, &c., &c.

March 1—3t. JOHN MOORE.

SEEDLING STOCKS, &c., FOR SALE.

APPLE (50,000) of two years growth, one to two feet in height, per thousand, $5; eight to twelve inches, per thousand, $3; Cherry (3000) of two years, transplanted, per thousand, $10; Franconia Raspberry Canes (2000) per thousand, $1; large early Scarlet Strawberry Plants, per thousand, $3.

The above will be packed for *California* or elsewhere, and delivered in New York free of all expense on all orders to the amount of $10, enclosing the cash.

☞ *Apple* Seedlings in large quantities at a reduced price.

PHILETUS PHILLIPS.
Middletown Point, Monmouth co., N. J. March 1—1t.*

Choice Poultry for Sale.

SEVERAL pairs of Fowls, comprising specimens of the celebrated Shanghae variety, of the "Marsh" and the "Fussel" stocks, which are much sought after in Massachusetts; also very superior Polish or Top-knot Fowls, and a few very choice specimens of a variety called the "Albany Dorking," well known and much esteemed in this vicinity. E. E. PLATT.
Albany, March 1—1t.*

NEW SUBSOIL PLOW.

THE subscribers offer for sale an improved Subsoil Plow, made under the advisement of Professor J. J. Mapes, and free from the objections urged against those formerly in use. The wearing parts are so arranged that they may be easily and cheaply renewed; while the amount of force requisite to move them is less than half that required by those previously made.

Price for No. 1, plain,.....$7 00
" " with Draft Rod,..... 8 50
" No. 2, " "..... .....11 00

To be had at the State Agricultural Warehouse, No. 25 Cliff street, New York. Mar. 1—1t. BARR & ATTERBURY.

THE ORIGINAL BLACK-HAWK.

AT the earnest solicitation of many friends of this justly celebrated Morgan STALLION, the owner has been induced to let him remain in Vermont for one season more.

The superiority of this horse as a Stock-getter is becoming more and more highly appreciated, as his progeny are disseminated over the country.

For particulars in regard to pedigree and performances see large bills and previous volumes of the Cultivator.

Black Hawk will be kept for this season at the stable of the subscribers.

Terms $25 the season, payable in cash or satisfactory notes on demand, with interest.

Good pasturage will be afforded at 3 shillings per week—accidents and escapes at the risk of the owners.

D. & D. E. HILL, Agents.
Bridport, Vt., March 1—4t.

Emery's Horse-powers and Threshers.

EMERY & CO.'s Premium Railway Horse-powers and Threshers, which were awarded the first Premium at the late State Fair, in competition with many others, for sale at the State Agricultural Warehouse, No. 25 Cliff street, New York.
Mar. 1—1t. BARR & ATTERBURY.

GUANO.

THE subscribers would inform the Farmers and others that they have just received by Bark Warwick, their supply of Peruvian Guano, which they will sell in bags averaging 150 lbs., at 2½ cents per lb. As the quantity is small in the market, our customers would do well to send us their orders at the earliest moment.

BARR & ATTERBURY,
State Agricultural Warehouse, No. 25 Cliff street, New York.
Mar. 1—1t

SAXONY SHEEP.

THE subscriber has for sale one hundred Saxony Sheep, selected a few years since by S. Whitman, Esq., of West Hartford, from the Strong Flock of Northampton. There are ten full blooded Bucks in the number; the rest are principally Ewes. These Sheep are good size, and excellent quality of wool. They will be sold reasonably. Enquire of the subscriber at Woodbury, Litchfield county, Connecticut. N. B. SMITH.
Woodbury, March 1, 1851—1t.

William Hovey's Patent Hay Cutter.

THESE machines are manufactured by the Patentee at Worcester, Mass., corner of Union and Exchange streets, where they will be sold wholesale and retail, as cheap, and on as good terms as any other Cylinder Cutter made in Worcester or elsewhere; also the Cylinder of Knives, including the Patent Right, at prices as low as they can be made by others. The Patentee has opened a Ware Room at the State Agricultural Warehouse, No. 25 Cliff street, New York, where a large assortment of his own machines, and also all other kinds of Cylinder Cutters, will be sold as cheap and on as good terms as they can be had from the makers. All Cutters manufactured by the patentee will be marked on the castings Wm. Hovey's Patent, Worcester, Mass. All Cylinder Cutters not marked Wm. Hovey's Patent, 1844, may be considered extremely deficient, as they have no means of adjusting the knives on the cylinders. These facts have been fully decided at almost every Fair in the United States, whenever these machines have come in competition with Wm. Hovey's Patent Cutter. He has been awarded by various Mechanical and Agricultural Committees several large cash premiums and six silver medals for the superior merits of his improvements in adjusting the knives on the cylinder.

CAUTION.—Look well as to these facts and to the marks on the castings—other Hoveys of Worcester, through the ingenious arrangement with Messrs. John Mayher & Co., who were, until recently, sole agents for Wm. Hovey's Patent Straw Cutter, may mislead their customers by offering Cutters made by Hovey of Worcester, all of which would be true, but *not* Wm. Hovey's Patent.

Worcester, Mar. 1—1t. WM. HOVEY.

WORLD'S FAIR ART UNION.

Under the Management of the New York Art-Union Company, incorporated by the Legislature of the State of New York.

THE Company intend to secure the services of a first-rate American Artist, who will proceed to London and make a sketch of the interior of the Great World's Fair in the very zenith of its splendor, when every thing will be displayed to the greatest possible advantage on the occasion of the visit thereto of the projector, the Prince Albert, his consort the Queen of England, and their children. From this sketch the engraving will be made, and will in itself be worth more than $5, according to the price usually charged by print-sellers.

The number of shareholders is limited by the act of incorporation to 4,000.

Each shareholder will be entitled to a copy of the Engraving and a chance in the distribution of profits.

The accounts will stand thus:

4,000 shares at $5 each, will be.....$20,000
The engraving, and 4,000 copies will cost....$5,000
The expense of management, advertisements,
&c., &c., will not exceed.....2,500
Total expenditure.....—— 7,500

Which deducted from $20.500 leaves $12,500 as profits.

These profits are to be employed in furnishing to fifty of the Shareholders a free first-cabin passage from New York to London and back, and in addition paying the expenses in London to the extent of $100 each of 25 of the 50 Shareholders thus furnished with free passages—thus: 25 Shareholders will have a free first-cabin passage to London and back and $100 in money to pay expenses while there, and 25 other Shareholders will have a free first-cabin passage to London and back.

In addition: Every Shareholder has a copy of the magnificent Engraving to be got up by the Company, and which will be worth at least twice the amount charged for one share.

The right to have the free passage, &c., &c., will be determined in the ordinary manner of Art-Unions, and in ample season to give time to proceed to London so as to be present at the most brilliant part of the exhibition.

In case any Shareholder should get a right of free passage and not desire to use it, he may receive its equivalent in money.

Any person desiring a share should send by Mail a request directed "The World's Fair Art Union, 50 Wall street, New York," enclosing $5 in funds current in his State.

The Trustees have resolved to make an allowance of 5 per cent. on all orders for more than 4 shares, and to send 10 shares on receipt of $45.

☞ Remittances by Mail at the risk of the Company. All letters must be pre-paid, and drafts made payable to the Secretary.

By order, J. TOWNSEND, Sec'y.
Mar. 1—1t*.

COMMERCIAL GARDEN AND NURSERY

Of Parsons & Co., Flushing, near New-York.

THE Proprietors of this establishment offer for sale their usual assortment of FRUIT AND ORNAMENTAL TREES, SHRUBS, VINES, ROSES, &c. Their stock of Apples and Pears is finer than any they have before offered. Also Pears on Quince, of their own growing. The Ornamental Department contains the usual well known varieties, all the best new Trees and Shrubs for Lawns and Arboretums, including the new Pines, Araucaria Imbricata, Cryptomeria Japonica, with Cedar of Lebanon, at one to two dollars each; and Cedrus Deodara of various sizes, at $1 per foot.

Catalogues furnished gratis on application by mail. March 1—1t.

TO FRIUT GROWERS AND NURSERYMEN.

ELLWANGER & BARRY solicit the attention of all Tree Planters, Nurserymen and Dealers, to their present stock, which is much larger and better than they have ever before had the pleasure of offering. It embraces among other things in large quantities,

Standard Fruit Trees—of all sorts.

Dwarf and Pyramidal Fruit Trees—for Gardens.

Gooseberries, Strawberries, Raspberries, Currants, &c.—all the newest and best kinds.

Ornamental Trees, Shrubs, Roses, &c.—including all new, rare, and desirable articles.

Buckthorn, Osage Orange, and other Hedge plants.

Stocks of all sorts—for Nurseries.

Green-house, Border and Bedding Plants.

Double Dahlias, &c.—in immense quantities.

Wholesale prices furnished when desired.

A new edition of the General Descriptive Catalogue is nowr eady, and will be sent gratis to those who apply *post paid.*

Mount Hope Garden and Nurseries, Rochester, N. Y., March 1, 1851—2t.

GREEN-HOUSE PLANTS, VINES AND ROSES.

PARSONS & Co. offer for sale every desirable variety of Green-House Plants, and many valuable novelties recently introduced from Europe. Growers of Grapes are invited to examine their Vineries, from which they can furnish good vines of about forty varieties at

50 cents for those one year old—75 cents for those two year old—$1.00 for those of extra size.

Their stock of saleable Roses, includes some thousands on their own roots, of the Remontantes, Bourbon, China and Garden Roses, in their various sub-classes.

Catalogues furnished on application by mail, to *Flushing*, near New-York. March 1—1t.

United States Agricultural Warehouse and Seed Store, No. 197 Water-street, New-York.

JOHN MAYHER & Co.

THE Subscribers, Manufacturers of, and Dealers in, Agricultural Implements, would inform the public that they keep constantly on hand, and offer sale, the largest and most complete assortment of Agricultural and Horticultural Implements, Field and Garden Seeds, in the United States, among which may be found the following:

Plows—Upwards of 150 different patterns and sizes, adapted to all the different kinds of soil and modes of culture, among which may be found the genuine Eagle Improved Plow, which has taken the Premium wherever exhibited or tested.

Harrows—Of all kinds and sizes.

Corn Planters—Different kinds and sizes, to work by man or horse.

Seed Sowers—A great variety, that will plant all kinds of grain and seed at any required distance.

Cultivators—A large and varied assortment.

Water Rams—Self-acting, of various sizes, with all the late improvements.

Chain Pumps—Complete, or in parts, in small or large quantities, to suit purchasers.

Grain Mills—French Burr Stone and Cast Iron, from $5 to $250, for man, horse or steam power.

Corn and Cob Crushers—Of different sizes.

Straw Cutters—Of all the approved patterns and sizes, for hay, straw, corn and corn stalks.

Corn Shellers—Several new kinds, together with all the old and most popular styles in use.

Garden and Fire Engine—Of recent invention, and the best article offered to the public.

Carts and Wagons—Of any style and size, furnished at the shortest notice.

Spring Wheat—Black Sea, and all other varieties of the best and most approved kinds Spring Seed Wheat.

Spring Rye and Barley—in any quantity.

Blue Grass Seed—Just received fresh from Kentucky, suitable for Lawns, and early and late pastures.

Clover Seed—White and Red, a superior article.

Timothy Seed—New and perfectly free from foul seed.

Garden Seeds—An extensive stock, selected with the utmost care, expressly for the American market.

Foreign Seeds—Of the best quality, and latest importation.

Grass Seeds—Ray, Lucerne and White Dutch Clover Seed, just imported.

Bird Seeds—Canary, Hemp, Rape and Millett.

Guano—Genuine Peruvian and Patagonian of the best quality.

Bone Dust—A prime article, in barrels or bags.

Plaster—Ground, in barrels.

Poudrette—At the manufacturers' lowest prices.

JOHN MATHER & Co.

March 1—tf. 197 Water Street, New-York.

Agricultural Machine Shop, Geneva, N. Y.

Wheel Plows,	Cultivators,
Clod Crushers,	Field Rollers,
Grain Drills,	Grain Reapers,
Thrashing Machines,	Clover Machines,
Corn Shellers,	Straw Cutters,
Road Scrapers,	Horse Powers. &c. &c.

Made and sold (wholesale and retail) by E. J. BURRALL.

AT THE late State Fair at Syracuse, the FIRST PREMIUM was awarded to THOMAS D. BURRALL for the best GRAIN REAPER, in competition with Hussey's and McCormick's, (both present.) Since then, he has perfected another, containing many new and splendid improvements, which render it a machine of greater utility, strength and durability, than any ever before offered to the public.

1st. It has a balance wheel on the top of the crank shaft, which aids the driving wheel in crossing water furrows, relieves the gearings from the violence of the crank motion, increases the effective force of the cutters, forms a convement level for shifting the wheels for oiling, and by the uniform motion produced by its compensating power, gives a new character to the whole machine.

2d. It cuts at any height required, and discharges the grain at the side or in the rear if preferred, by a few minutes change.

3d. By means of a new guard of cast iron, (which will neither bend nor break,) neatly fitted to the knives, it cuts grain, timothy or clover seed, (wet or dry,) without clogging. In addition to these important improvements, the frame is strong and compact, and lies above all the level of the apron, in order to pass through gates and over water furrows, without hitting.

The wheel is large, and works well on rough ground; the shifting gear, and the entire arrangement of the working parts, extremely neat and convenient, and the whole made of the best materials, and finished with great care.

It has no reel to waste the grain, no pullies, straps, or loose harness to get out of order, but is strong and simple, just what the Farmer needs to do his work well, without the risk of loss by breaking down in the midst of his harvest.

It is warranted to be thoroughly built, and to work well; and if any part proves defective and is returned, it is to be made good without charge; and the machine when sold, is made to work well, or the money returned.

TERMS—Cash or approved notes. Orders should be sent in *early*, to give time for perfect work.

SIZES.—No. 1, 4 *feet* 6 *in. No.* 2, 5 *feet. No.* 3, 5 *feet* 6 *in. No* 4, 6 *feet cut.*

Burrall's Reaper.

As the REAPER has been in use during the past season only, the following testimonials from respectable farmers are offered:

Wolcot, Nov. 1, 1850.

I used one of Mr. Burrall's new Reapers to cut about twenty acres of wheat last harvest. It requires but two horses, does its work well, cuts clean whether the grain be wet or dry, and leaves the sheaves in fine order for binding. I know no machine that runs lighter or makes better work. WILLIAM STUBBS.

Phelps, 5th Sept., 1850.

I hereby certify that I have seen Mr. Burrall's new Grain Reaper thoroughly tried, and am satisfied that it can never be clogged, but will cut grain of all kinds, and clover seeds in all conditions. The Gearings and frame are uncommonly strong, and well arranged; and every part of the machine is got up in first rate order for convenience and durability. It requires no faster walk, or harder draft for horses, than common plowing. I have no hesitation in recommending it as the best I have ever seen. WM. P. DIMICK.

Benton Farm, Ontario county.

I have one of Mr. Burrall's new Reapers, and have tried it this fall for cutting clover seed. I have cut from 15 to 20 acres, and find it does the work well, and beyond my best expectations. It is easily shifted in a few minutes, so as to cut close to the ground, or at any height required, and never clogs even in the stoutest grass. It is very strong in all its parts, and very convenient for use. It requires but a moderate motion for the team, and may be worked by oxen as well as horses. I think it does not require as heavy draft as ordinary cross plowing. THOMAS BUTCHER.

We the undersigned, have seen the machine at work, and fully concur in the above statement. P. COPELAND.
WILSON BUTCHER,
25th Oct., 1850. SYLVESTER JUDD.

Seneca, 12th Sept., 1850.

Mr. Burrall—Sir: I have used your new Grain Reaper this season, and am not only entirely pleased with it, but perfectly convinced that it is the best I have ever seen, as it runs lighter, cuts better, and is far more convenient, especially on rough ground—it is thoroughly finished with brass boxes and steel couplings throughout. The construction and arrangement of the whole are exceedingly strong and durable, and by a very neat and ingenious contrivance, it is made to cut the grain at any height.

I have no doubt of its entire success, and can confidently recommend it to the public as a very valuable improvement.

W. W. BRISTOL.

Burrall's Wheel Plows.

Work well in all soils, and save about one-third of the draft. 3,500 now in use, and demand steadily increasing. For sale, (wholesale and retail) GENEVA, Ontario county, N. Y. E. J. BURRALL.

March 1—1t.

Agricultural Books

OF all kinds, for sale at the Cultivator Office, 407 Broadway, Albany.

Highland Nurseries, Newburgh, N. Y.

A. SAUL & CO. beg leave to call the attention of *Dealers* and *Planters* of trees, and the public in general, to their very large and complete stock of FRUIT AND ORNAMENTAL TREES, which they offer for sale the coming spring. The trees of these Nurseries are all grown on the premises, and propagated under the immediate supervision of Mr. SAUL, whose long connection with this establishment is some guarantee for the accuracy of the stock now offered for sale. It consists in part of over

20,000 Pear Trees, 5 to 8 feet high, and embracing all the leading Standard Varieties, as well as those recently introduced, of merit, either of American or Foreign origin.

20,000 Apple Trees, of *extra size*, 8 to 10 and 12 feet high, including every variety worthy of cultivation.

10,000 Plum Trees, 5 to 8 feet, of every known kind of reputation, as well as all the novelties of recent introduction.

10,000 Cherry Trees, 6 to 8 feet and over, among which will be found all the desirable and choice varieties.

A large stock of handsome, well grown trees, of Peach, Apricot, Nectarine and Quince, in every variety. Also,

Grapevines, Native and Foreign, Raspberries, Gooseberries and Currants, Strawberry plants and Esculent Roots, such as Asparagus, Rhubarb, Seakale, &c., of the most approved kinds.

Pear on Quince, Cherry on Mahaleb, and Apple on Paradise stocks—for Pyramids or Dwarfs for garden culture, and embraces all the kinds that succeed on those stocks.

Deciduous and Evergreen Ornamental Trees & Shrubs.

100,000 Deciduous and Evergreen Ornamental Trees, embracing all the well known kinds suitable for street planting, of *extra size*; such as Sugar and Silver Maple, Chinese Ailantus, Horse Chestnut, Catalpa, European and American Ash, Three Thorned Acacia, Kentucky Coffee Tree, Silver Abele Tree, American and European Basswood or Linden, American and European Elm in several varieties, &c. Also all the more rare and select, as well as well known kinds suitable for Arboretums, Lawn and door-yard planting, &c.; such as Deodar and Lebanon Cedars; Araucaria or Chilian Pine; Cryptomeria japonica; the different varieties of Pines, Firs, Spruces, Yews, Arborvitæs, &c.

Weeping Trees.—New Weeping Ash, (Fraxinus lentiscifolia pendula,) the old Weeping Ash, Weeping Japanese Sophora, Weeping Elms, (of sorts,) Umbrella Headed Locust, Weeping Mountain Ash, Weeping Willow, Large Weeping Cherry, Weeping Birch, Weeping Beech, &c. &c.; together with every variety of rare Maple, Native and Foreign; Flowering Peach, Almond and Cherry; Chestnuts, Spanish and American; Tom and Copper Beech; Judas Tree, Larch, Gum Tree, Tulip Tree, Osage Orange, Paulownia, Mountain Ash, (American and European,) Magnolias of sorts, with many other things—including some 200 varieties of Shrubs, Vines, &c., for which see Catalogue, a new edition of which is just issued, and will be forwarded to all post paid applicants.

A large quantity of Arborvitæ for Screens, and Buckthorn and Osage for Hedge plants.

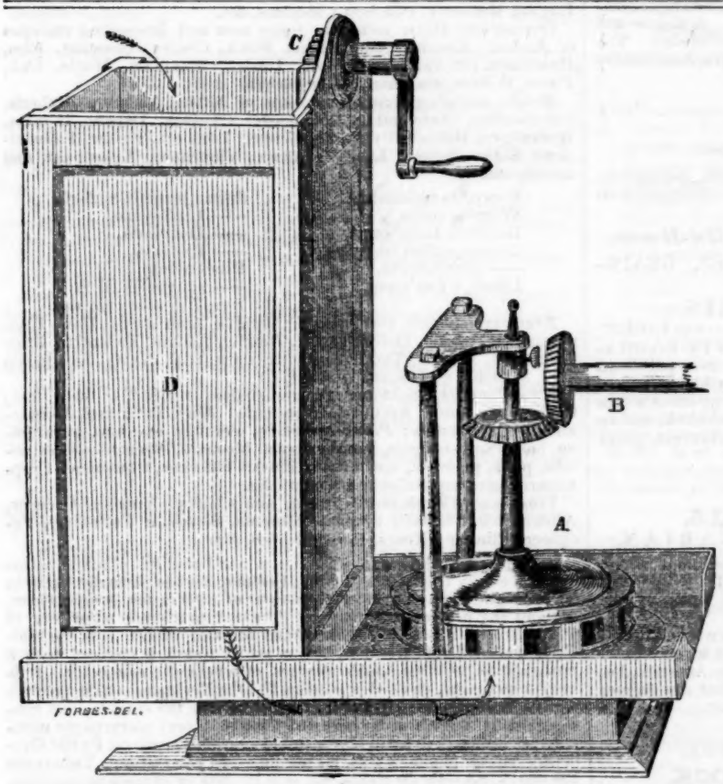
The above will be sold on as liberal terms as similar stock can be purchased elsewhere. For further particulars we would again refer to priced Catalouge. A liberal discount will be made to persons who buy to sell again, and extensive planters on their own account.

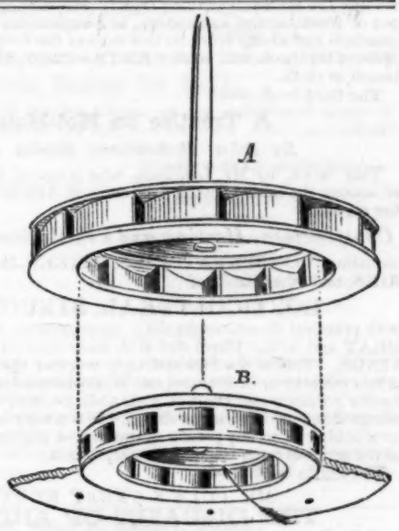
Newburgh, March 1, 1851—2t.

Dwarf and Standard Pear Trees.

PARSONS & CO. have just received from the Ship a fine lot of Pears on Quince, and on their own root, comprising the most esteemed varieties.

The presence of one of their firm in Europe, and consequent advantageous purchases, enable them to offer these trees at prices much reduced from last year. They also offer their usual assortment of Pears of their own growth. Flushing, L. I., March 1, 1851—1t.





EXPLANATION OF DIAGRAM.

(A) Wheel to which the shaft is attached.
(B) Line of shaft and bevel wheels, which can be arranged as desired.
(C) Rack and pinion to raise the gate.
(D) Penstock or floom, into the top or side of which the water can be brought.

IN PERSPECTIVE VIEW.

(A) Shows out and inside of buckets.
(B) Shows inside form or shutes.
The arrows show the course in which the water is taken to the wheel.

UNRIVALED IMPROVEMENT IN WATER WHEELS.--IMPORTANT TO MILL OWNERS.

THE subscribers are sole agents for making and vending the *Best Water Wheel in the World*—known as VANDEWATER'S

Patent Improved Turbine Water Wheel.

It has been fully tested, and found far in advance of all other wheels, both in power, and economy in the use of water. Every drop is effective, and none wasted. The wheel is not obstructed by ice, or affected by back water; is more durable, and requires less room than any other. The following statement will show the power of different sizes, under different heads, with a given quantity of water:

Head of Water.	Four foot wheel, using 68 inches—will grind	Five foot wheel—using 108 inches—will grind	Six foot wheel using 225 inches—will grind	Seven foot wheel, using 400 inches—will grind
5 foot.	3 bushels wheat per hour.	5 bushels wheat per hour.	12 bushels wheat per hour.	21 bushels wheat per hour
8 "	6 do do	11 do do	23 do do	42 do do
11 "	9 do do	17 do do	35 do do	63 do do
14 "	12 do do	22 do do	46 do do	83 do do
17 "	15 do do	28 do do	58 do do	104 do do
20 "	18 do do	32 do do	71 do do	126 do do
24 "	22 do do	43 do do	90 do do	154 do do
28 "	26 do do	51 do do	110 do do	182 do do

We are prepared to fill orders for Wheels, and Mill Work of every description, at short notice. Mr. JAGGER is a practical Mill-wright and will be at all times ready to furnish information or drawings. Persons ordering wheels, will please give full descriptions of their power work, &c.; also which way they are to run.

JAGGER, TREADWELL & PERRY,

March 1—2t. Eagle Foundry and Machinery Works, No. 110 Beaver-street, Albany, N. Y.

Great Books for Farmers, Gardeners and Horticulturists,

And a Rare Chance for Agents to make Money.

JOHN P. JEWETT & COMPANY, Publishers, Nos. 17 and 19 CORNHILL, BOSTON, take pleasure in announcing to the intelligent Farmers, Gardeners and Horticulturists of the United States, that they have at length completed their valuable collection of works on Agriculture, and its kindred sciences, and that the two last of the series are now in the hands of the stereotypers, and will be ready for delivery to subscribers and others on or before the first day of March. The two volumes now in press are, first,

Breck's Book of Flowers,

By Joseph Breck, Esq., of Brighton,

For many years editor and publisher of the "New-England Farmer," and one of the most distinguished Florists in America. This volume contains the results of the practical experience of a man of taste and science, and is, without doubt, the most thorough and reliable book, on the cultivation of Flowers and the laying out of Flower Gardens, to be found in any language; it is emphatically the Ladies' and Gentlemen's complete Floral Vade Mecum. This book will be in 12mo. form, containing about 336 pages, fine cloth binding, and we have determined to sell it at 75 CENTS, to bring it within the means of all, and to ensure a large sale, as it is a book which every lover of Flowers must own.

The second in the series is—

The Kitchen Gardener's Text Book,

By one of the most distinguished Gardeners of New-Jersey. This is truly a practical work, avoiding useless, and to the masses, unmeaning technicalities, the author handles his subjects with the skill of a thoroughly versed, common-sense practitioner. With the aid of this volume the merest Tyro may rapidly advance through the various stages of Horticultural knowledge, to complete success. A simple and practical and cheap work on this subject has long been needed. The price of this book will be 50 CENTS,—12mo., 216 pages, handsomely bound in cloth.

The third book is—

A Treatise on Hot-Houses,

By Robert B. Leuchars, Garden Architect.

This work, by Mr. Leuchars, who is one of the most distinguished among the many Scotch Gardeners of America, is a practical treatise on the

Construction, Heating and Ventilation of Hot-Houses,

including CONSERVATORIES, GREEN-HOUSES, GRAPERIES, and other Kinds of

HORTICULTURAL STRUCTURES,

with practical directions for their management in regard to LIGHT, HEAT and AIR. Illustrated with more than SEVENTY ENGRAVINGS. This is the first and only work of the kind ever published in this country or in Europe, and is recommended very highly by professors Silliman and Dana of Yale College, and by many other scientific gentlemen. Price one dollar. It is a very learned work, and an invaluable one to any person who owns, or who intends to erect, either of the structures on which it so ably treats.

The fourth book is—

MR. COLE'S GREAT WORK ON

THE DISEASES OF ANIMALS,

OR THE AMERICAN VETERINARIAN,

30,000 copies of which have already been sold, and the sale of which continues in a manner almost without a precedent. To every man who owns a horse, a cow, a pig, or even a hen, this work, by Mr. Cole, is of more value than ten times its cost.

The lives of many valuable animals have already been saved by following Mr. Cole's plain directions for their treatment when sick.—This is the cheapest work of the kind ever published in America, being but 50 CENTS at retail, and we do not believe that any farmer would willingly be without it, if placed within his reach.

The fifth book is—

MR. COLE'S OTHER VALUABLE WORK,

THE AMERICAN FRUIT BOOK,

Or, Fruits and Fruit Trees of America,

18,000 of which have been published in less than two years.

This beautiful and thorough work is illustrated by over 200 engravings, of Apples, Pears, Peaches, Plums, Cherries, Grapes, Raspberries, Gooseberries, Currants, &c. &c., and the various Fruit Trees of our country; also cuts representing the various modes of training vines and the different styles of grafting, budding, pruning, &c. It is a work which, for accuracy of description and reliability, has never been exceeded, if equalled, and contains more than twice the amount of matter of any other Fruit Book published in America at the same price, viz: 50 CENTS. We could fill a volume with the recommendations of Mr. Coles's two books, which we have received from the most eminent Farmers and Horticulturists of New-England, the Middle States and the great West.

A Word now to Agents.

We are now prepared to offer to capable, responsible, and energetic Book Agents, a chance for making money, such as seldom occurs. With the above five works, an agent of tact or ability could hardly fall upon a spot so barren that he could not dispose of one or more of these works, and in many cases would sell one of each; and in populous districts, a large number of copies could be sold daily. We intend to district out the New-England States, mostly into counties. Also, the States of New-York, Pennsylvania, New-Jersey, Ohio, and the Western States, we should prefer to dispose of, to some one individual in each state, for him to district out into sub-agencies.

The books will be ready for delivery by the 1st of March, and it is important that the various Counties and States should be disposed of before that time. A cash capital of $30 to $50 will be needed by every agent for a County, and a much larger sum by a State agent.

Address, post-paid, the Publishers, JOHN P. JEWETT & Co.,
March 1—2t. 17 & 19 Cornhill, Boston.

NEW AND VALUABLE PLANTS,

For the Nursery, Garden and Pleasure Grounds.

B. M. WATSON offers for sale at the OLD COLONY NURSERIES, PLYMOUTH, MASS., a very complete assortment of plants, including all those of recent introduction, consisting in part of *Pear*, Quince, Paradise, Mahaleb, Plum, Cherry and Apple stocks, at the lowest rates.

Young Trees, 3 to 5 feet high, in great variety, mostly at from $5 to $12 dollars per 100, of the finest deciduous sorts, for nurseries or young plantations, and *Evergreens* from seed, from 1 to 1½ feet.

Dwarf Pear, Apple, Cherry, Plum, Apricot and Nectarine. Trees in a bearing state, or nearly so, of the finest and best established sorts, at the usual rates.

Standard Trees of the same. Diana Grape, $1.

Scions of the best Apples, $1 per 100. Pears and other Fruit and Ornamental Trees and Shrubs, $2 per 100. In large quantities at low rates.

Currants, including all the new sorts. Raspberries, Gooseberries in great variety, and Rhubarb, at $1.50 per dozen—$10 per 100.

Strawberries, in 20 fine varieties, mostly at $1 per 100. Burr's New Pine, $2, Iowa, $2, Jenney's Seedling, $1.50 per 100. Richardson's Seedlings, (fine) 50 cents per dozen.

English Walnut, Spanish Chestnut, Filberts and other nuts. Black English Mulberry, (the best,) Medlars, &c.

Ornamental Trees, including many new and interesting varieties of Arabia, Æsculus, Ash, Beech, Birch, Cherry, Chestnut, Elm, Hawthorn, (12 var.) Laburnum, Linden, Magnolia, Maple, Oak, Plane, Willow, and many other genera.

Shrubs, including many fine sorts of Althea, Arbutus, Berberis, Calycanthus, Cheonanthus, Cotoneaster, Cytissus, Daphne, Deutzia, Hydrangea, Halesia, Pyrus, Ligustrum, Lonicera, Peonia, Philadelphus, Ribes, Spirea, Lilac, Tamarix, Viburnum, Xylosteum, and among others,

Forsythia viridissima,	Spirea prunifolia, fl. pl.
Wiegela rosea,	—— Lindleyana,
Lonicera Ledebourii,	—— Douglassi,
Chimonanthus fragrans,	—— Reevesii,
—— grandiflorus,	Ribes albida,
Lilacs, 8 fine sorts,	—— sanguinea, fl. pl.
	Pyrus, double crimson.

Evergreen Shrubs, consisting of Arbutus, Andromeda, Box, Euonymus, Gaultheria, Holly, Laurel, Juniper, Ledum, Menzeizii, Rhododendron, 8 sorts, Vaccinium vitis idara, Irish Yews, Evergreen Oak, Mahonia aquifolium, (excellent.)

Rare Conifers, including Deodar Cedars, one-half to three feet; Cedar of Lebanon, Araucaria imbricata; *Abies* Douglassi, Menziezii and Cephilonica; *Pinus* Austriaca, cembra, excelsia, gerardiana, halepensis, insignis, Lambertiania, Morinda, Mughus; *Picea* nobilis, picta, pindrow, spectabilis; *Thuya* filiformis, Chinensis; Cryptomeria japonica, Salisburia adiantifolia.

Vines and Climbers—Wistaria, (sorts,) Joy, Virginia Creeper, Aristolochia, *Clematis* azurea, flammula, Sieboldtii and others, Periploca, Climbing Roses, Honeysuckles, &c.

Calestegia Pubescens.—This new and beautiful climber, introduced recently from China by Mr. Fortune, proves perfectly hardy in New-England, having stood *the winter of* 1850 *in the grounds here*, without any protection whatever. Trained to a single pillar, say 10 feet in height, it is a very striking and beautiful object from the middle of June till cold weather, during which time it is covered with a profusion of its large double flowers of a delicate rose color. It is very ornamental, planted in patches like the Verbenas, and is very effective in young plantations, trailing prettily on the surface, and running among the lower branches of trees in a very picturesque manner. It is therefore particularly suited for Cemeteries and Public Gardens. Strong plants in pots, $1 per pair—$4 per dozen. Tubers for 100 plants, $5,—for 50 plants, $3, sent by mail or express at any time, with directions for propagation and culture.

Prairie and other Running Roses, Perpetual, Bourbon, Tea and China Roses, in great variety.

For Bedding out.—Chrysanthemums, (30 new varieties) and Dahlias, $2 per dozen—Verbenas, including Reine de Jour, Iphigenia, St. Margaret, Robinson's Defiance, and 20 other sorts, $1.50 per dozen—Fuchsias, a fine collection; Carnations and Calestegia pubescens, $1 per dozen—Scarlet and other Geraniums, Salvias, Veronica Lindleyana, Lobelias. Double white Feverfew: Heliotropes Souvenir de Leige, Voltairianum and intermedia, $2.50 per dozen. Ipomeas; Maurandia alba, rosea and Barclayana; Coben, Lophospermum, Physanthes alba, &c., $2.50 per dozen.—Plumbago Larpentae, 50 cents—Cestrum aurantiacum, 50 cents—Asclepias curassavica, 25 cents.

*** Priced lists sent post paid, on application. ☞ Carriage of all packages paid to Boston. Plymouth, Mass., March 1, 1851—tf.

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TWO fine Devon Cows, 3 and 6 years old; also a fine yearling Bull and Heifer.

The subscriber offers the above for sale, of pure blood, and bred from the best stock in the country. FRANCIS W. COWLES.
Farmington, Conn. Nov. 23, 1850. Dec. 1—6t.

To Farmers, Horse-buyers, Breeders, Breakers, Smiths, &c.

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NOW ready, the Third Thousand of "YOUATT on the Structure and Diseases of the Horse," with their Remedies, brought down to 18 '6 by W. C. SPOONER, M. R. C. V. S., to which is prefixed an account of the Breeds in the United States, compiled by H. S. RANDALL, with 55 illustrations, large 12mo, 483 pages—price $1.50—and for sale by Booksellers generally, through the U. States.

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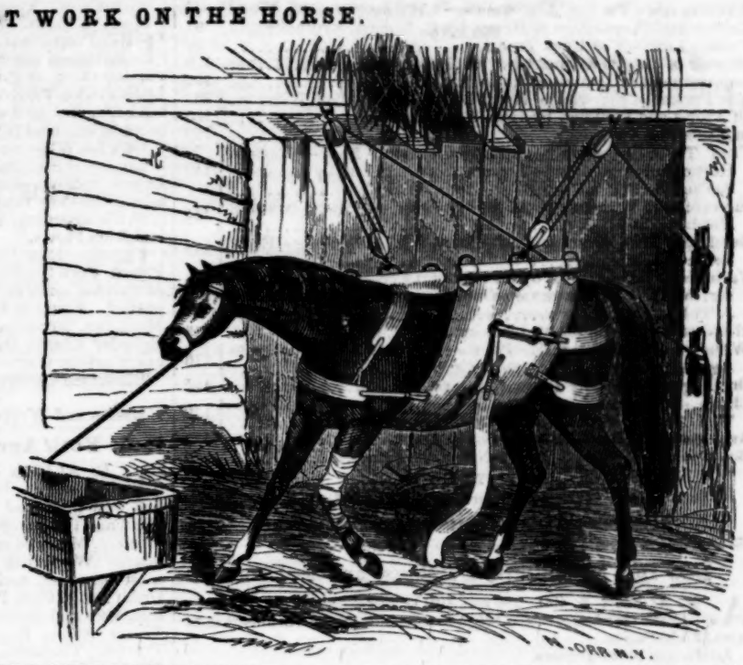
March, 1, 1851.



Fruit and Ornamental Trees,

For sale at the Nursery of H. Snyder, Kinderhook, Col. Co. N. Y.

THE proprietor of this establishment offers for sale, the coming spring, his usual assortment of FRUIT and ORNAMENTAL TREES, SHRUBS, VINES, ROSES, GREEN-HOUSE PLANTS, &c.

Most of the trees are of large, handsome and thrifty growth, and among them may be found many of the best sorts of Apples, Pears, Plums, Cherries, Peaches, &c., grown in this country.

The stock of Apples and Pears is finer than has been offered before at this establishment.

Also, Pears on Quince stocks—Cherries on Cerasus Mahaleb stocks—Apricots, Nectarines, Grape Vines, Gooseberries and Currants, at the lowest market prices.

Ornamental Trees can be furnished by the hundred, at very reasonable prices, and of various sizes, for ornamental grounds.

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PLANTS FOR HEDGES.—Privet, Buckthorn, English Hawthorn, Locust, &c.

Seedlings of the following kinds—Sugar Maple, English Sycamore Maple, Horse Chestnut, Black Walnut, White Ash, European Mountain Ash.

A large stock of Apple Seedlings, suitable for root-grafting, at the lowest rate.

Catalogues will be forwarded to all applicants.

Feb. 1, 1851—3t.

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THE subscriber offers for sale the farm on which he now resides, situate four miles from the village of Waupun. The Farm contains 400 acres of land. 200 of which is prairie; the balance openings, timber and meadow land. On the farm there is two new houses, barn, stables, wells of water, and a large quantity of fine fruit trees. 200 acres are under good cultivation, near 50 of which is in winter wheat—100 tons of good hay may be cut on the place. The farm is well watered, and is without exception, one of the best farms in the state. It can be easily divided into three splendid farms, and will be sold together or separate. The price will be made low, and terms easy. Enquire, post-paid, of TOWNSEND GREEN, Waupun, Fond Du La co., Wisconsin. Feb. 1, 1851—2t.

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Losses paid in 30 days after proof of death.

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Aug. 1, 1850—1yr. B. P. JOHNSON, Agent, Albany.

Transactions N. Y. S. Ag. Society.

THE Transactions of the New-York State Agricultural Society, vols. 1 to 9, for sale at the Office of "THE CULTIVATOR"—price $1 per vol

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Northern Spy.	Swaar.
Norton's Melon.	Westfield Seek-no-further.
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Ribston Pippin.	Roxbury Russet.
Red Canada.	Autumn Strawberry.
Gravenstien	Green Sweeting.
Red Astrachan.	Munon Sweeting.
Lowel.	Talman Sweeting.
Porter.	Summer Rose.
Fameuse.	Wagener.
St. Lawrence.	Early Harvest.
Yellow Bell-flower.	Hawley or Dowse.

I will pack and send either by mail or Express at one dollar per hundred, orders post paid.

Virgalieu, Osband's Summer, Oswego Beurre, Onondaga or Swan's Orange, Pear Scions at 3s. per dozen.

N. B. In all cases where it is possible, I will send specimens of the Northern Spy apple. JAMES H. WATTS.

Rochester, Feb. 1—2t.

Great Sale of Dairy Stock.

THE subscriber will offer for sale, without reserve, at Public Auction, on TUESDAY the *25th day of March*, 1851, at 12 o'clock, on the farm on which he resides, at Morrisania, Westchester county, New-York, upwards of

100 Head of Cows and Heifers.

About 50 head of them are Native and Amsterdam Dutch Cows, selected by the subscriber with reference to milking qualities. The remainder, about 50 head, are grades—half, three-fourths, and seven-eighths blood Heifers, from 1 to 5 years old, bred by the subscriber, out of the very best Cows, and got by the celebrated imported short-horned Bull "Marius;" and so far as they have come to maturity, they appear to combine, with most faultless symmetry, nearly every point indicative of perfection in a Dairy Cow.

Taking the whole dairy together, it is perhaps the best selected in the United States. The Cows, with a few exceptions, are all young, and in calf by the fine Bull "Amsterdam."

The many premiums I have been awarded, by the State Agricultural Society and by the American Institute, give evidence of success as a breeder.

I will also sell my short-horned Cow, that took the first premium at the American Institute Fair, in October last.

Two 2-year old Heifers and one yearling, all thorough bred.

Two yoke of very superior WORKING CATTLE, with several fine HORSES.

One BOAR, of the Russian grass breed.

One imported improved (white) Berkshire SOW and PIGS.

One Suffolk SOW and PIGS.

The number of hogs in all, will be from 50 to 60, and some of them are as fine as can be produced.

All the Farming and Dairy utensils, which are numerous.

☞A Catalogue and description of each animal, will be given on the day of sale. Stock purchased to be sent to a distance, will be delivered by the subscriber on ship-board or railroad cars, in the city of New-York, free of risk and expense to the purchaser.

Morrisania is nine miles from New-York by Harlem Railroad.

Jan. 1, 1851—3ms.* THOS. BELL.

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Fresh Garden Seeds, a large assortment of the various kinds. Also, Field Seeds.
Lawn and other grasses.
Horticultural and Garden Implements. The best and greatest variety for sale in the United States. Plows, Spades, Hoes, &c. &c.
Guano, *Bone Dust*, *Poudrette*, and other fertilizers
Prompt attention given to all orders by letter or otherwise.
March 1—tf.

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Mar. 1, 1851.

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The salt now offered is a pure article, free from specks, white as snow and sparkling as crystal. There is no excuse for a deficiency of cleanliness, and the difference in the price of a pure, clean article, is of little consequence, and scarcely felt. Butter known to be made with this salt, commands a better price and will sell much more readily in this market. For sale by the bushel, or in bags of one peck each, by C. N. BEMENT,
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Is published on the first of each month, at Albany, N. Y., by

LUTHER TUCKER, PROPRIETOR.

LUTHER TUCKER & SANFORD HOWARD, Editors.

$1 per Ann.—7 Copies for $5—15 for $10.

☞ All subscriptions to commence with the volume, (the Jan. No.,) and to be PAID IN ADVANCE.
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